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MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : Critique of a Soviet Rear Services Exercise

1. Enclosed is a verbatim translation of a Soviet TOP SECRET document entitled "Critique of the Front Two-Stage Operational-Rear Exercise Conducted in July 1961". This Critique was made by the Commander-in-Chief of Ground Troops, Marshal of the Soviet Union Chuykov, and the Chief of the Main Staff of the Ground Troops, General of the Army Popov.

2. In the interests of protecting our source, this material should be handled on a need-to-know basis within your office. Requests for extra copies of this report or for utilization of any part of this document in any other form should be addressed to the originating office.

Richard Helms
Deputy Director (Plans)

Enclosure

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Original: The Director of Central Intelligence

cc: Military Representative of the President

Special Assistant to the President for
National Security Affairs

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Department of State

The Director, Defense Intelligence Agency

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COUNTRY : USSR
SUBJECT : Critique of a Soviet Rear Services Exercise
DATE OF INFO: July 1961
APPRAISAL OF
CONTENT : Documentary
SOURCE : A reliable source (B).

Following is a verbatim translation of a Soviet TOP SECRET document entitled "Critique of the Front Two-Stage Operational-Rear Area Exercise Conducted in July 1961". This Critique was reported by the Commander-in-Chief of Ground Troops, Marshal of the Soviet Union Chuykov, and the Chief of the Main Staff of the Ground Troops, General of the Army Popov.

Comment: The legibility of the sketches was such that only Nos. 1, 4, and 12 could be reconstructed. The others have been reproduced as received. A key to the legible abbreviations on all of the sketches is given on page 102 ff.

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Ministry of Defense of the Union of SSR's

Top Secret

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**CRITIQUE OF THE FRONT TWO-STAGE
OPERATIONAL-REAR AREA EXERCISE CONDUCTED
IN JULY 1961**

MOSCOW - 1961

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Marshal of the Soviet Union V.I. Chuykov

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REPORT
of the Chief of the Directing Staff
General of the Army

M.M. POPOV

Comrade generals and officers!

I have been commissioned to report to you on the characteristics and course of the unilateral two-stage operational-rear area exercise which was conducted in accordance with the directive of the Minister of Defense for operational training in 1961.

The purpose of the exercise was to study further the questions of the organization of the rear support of troops of a front, especially missile troops, in the first operation of the initial period of a war.

The following were used as trainees for the operations by the "East" side: the commander and staff of the Carpathian Military District, the commanders and staffs of the 13th and 38th Combined Arms, and of the 8th Tank and 57th Air Armies, the operational group of the 8th Army of the Anti-Aircraft Defense (Protivo Vozdushnaya Oborona - PVO) of the Country, the commanding officer and staff of the 28th Army Corps and also operational groups of the 15th Motorized Rifle and 23rd Tank Divisions. These appeared respectively in the roles of front, army, corps and division echelons.

The following missile troops appeared in the exercise: the 35th and 164th Missile Brigades, the 579th Independent Aviation Engineer Regiment of Cruise Missiles, 715th and 28th Antiaircraft Missile Regiments.

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The rear services of the front were actually represented by a directorate (upravleniye) of the forward front base with depots of missile fuel, POL, rations, transport units (chast podvoza), pipeline and area road-traffic control brigades, the hospital base with four hospitals of various designations and other rear units and establishments.

The missile-technical units of the front were represented by the front missile-technical base and the front technical base of the antiaircraft guided missiles.

The rear services of the 1st Army were actually deployed under the control of the mobile army base with its depots, two motor vehicle transport battalions, an area road traffic control battalion, a separate medical detachment and other subunits.

In addition, an army missile transport battalion (raketno-parkovyy divizion) actually participated.

The divisional regimental rear services were represented by rear service units and subunits of the motorized rifle and tank divisions.

More than 50 rear service large units, units and establishments participated in the exercise.

In all, about 22,000 persons, some 7,000 motor vehicles, 18 missile and antiaircraft missile launchers, 4 launchers for the front's cruise missiles, 98 tanks, 66 aircraft and helicopters, 14 radar stations, 860 radio stations and other combat and special equipment were used in the exercise.

The directing staff, umpiring staff and scientific-research groups were made up of generals and officers of the Main Staff of the Central Directorates of the Ministry of Defense, of a number of military districts and of the academies of Ground Troops.


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The following initial situation was established for the conduct of the exercise (Sketch 1).

In connection with the aggravation of international relations and the increasing threat of military operations in Europe, the "West" and "East" began hurriedly to deploy their armed forces operationally and to bring them to increased combat readiness.

During the night of 18 July, the 2nd Front of the "East" brought its troops, alerted for combat (po boyevoy trevoze), out of their permanent disposition areas and began to move them toward the national border. Elements of the operational rear and of the missile technical units were deployed at the same time.

With the aim of frustrating the attack being prepared by the "West", the front was given the task of preparing and conducting an offensive operation, of destroying the nuclear/missile weapons and of routing the main forces of the Central Group of Armies; on the fourth day of the operation to occupy the areas and communications centers of: Vlodava; Kholm, Krasnystav, Zamostye; Yaroslav, Peremyshl, Khyrov.

Subsequently, developing a swift offensive in the general direction of Sandomir and Ostrava, the front was to rout the approaching reserves of the enemy, to destroy his means of nuclear attack and on the eighth day of the operation to occupy the areas: Chenstokhov, Ostrava, Kremnitsa.

The readiness of the troops of the front for the offensive was determined on 19 July.

For the operation, the front was allotted 226 nuclear warheads and 277 missiles with chemical filler (khimicheskoye snaryazheniye).

At the beginning of combat operations, the Headquarters (Stavka) delivered nuclear/missile strikes

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with its means against the most important targets and communications lines of the enemy west of the line Radom, Tarnuv, Debretsen. In addition, the use of ten nuclear warheads in support of the front on its request in the course of the operation was provided for.

For the conduct of the operation, the front had: two combined arms, one tank and one air armies, an army corps, two front and three army missile brigades, two independent missile battalions, nine missile anti-aircraft regiments of types "A" and "S" and twenty-four independent anti-aircraft missile battalions of the type "M".

In all, the front was composed of twenty-three divisions, including seven tank and one airborne.

The air army had an independent aviation engineer regiment of cruise missiles, two fighter aviation divisions, a division of fighter-bombers and a bomber division.

For the use of nuclear weapons, the front had at its disposal 88 missile launching mounts (36 operational-tactical, 44 organic and 8 FKR-1 [probably "front-cruise missile"—frontovaya krylataya raketa] and 39 missile delivery aircraft.

The 1st Front operated from the right, with the task of advancing in the direction of Warsaw and, on the 7th or 8th day of the operation, of occupying the Lodz area with the troops of its left flank (krylo).

From the left, the 3rd Front prepared for an offensive operation with the goal of routing the main forces of the Southern Group of Armies of the "West" and of occupying an operational bridgehead on the Danube in the area of Budapest on the 8th or 9th day of the operation.


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In the zone of operations of the 2nd Front the "West" deployed troops of the Central Group of Armies comprising nineteen divisions (including four armored and one airborne). The group had the task of destroying the "East" in the direction of Kiev occupying a bridgehead on the Dnepr and of developing an offensive in the general direction of Kursk.

The operational position of the troops of the 2nd Front at 0700 hours on 18 July was characterized as follows.

The 3rd Army Corps composed of three motorized rifle divisions was concentrated in reserve areas, having the 33rd Division at a distance of 30 kilometers from the national border, the 59th Division north of Olevsk and the 31st Division north of Ovruch.

The 6th Army had two divisions 30 to 50 kilometers from the national border and two divisions west and south of Belaya Tserkov. The army missile brigade was located 125 kilometers from the border.

The 1st Army continued to move troops toward the border. Three of its divisions were located at a day's rest (dnevka) northwest of Kiev, 150 to 200 kilometers from the border. The army missile brigade was located in the Radomyshl area. Two divisions were bringing their complement up to full strength (doukomplektovaniye) (the 5th Motorized Rifle Division in the area south of Ichnya and the 11th Motorized Rifle Division south of Shostka).

The 4th Tank Army consisting of four divisions was located in the area south of Kiev on the west bank of the Dnepr.

The 21st Front Missile Brigade (R-170) was concentrated southwest of Korosten 100 kilometers from the border.


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The 22nd Front Missile Brigade (R-300) was located at a day's rest in the Kanev area.

The 10th Independent Missile Battalion (KR-500) was concentrated 50 kilometers south of Kiev.

The 12th Independent Missile Battalion (R-550) arrived on 19 July.

The 14th Motorized Rifle Division was brought up to the reserve area east of Kiev on the left bank of the Dnepr.

The 37th Motorized Rifle Division completed its concentration in the woods southwest of Yagotin.

The 93rd Airborne Division was located in a concentration area 25 kilometers east of Sudzha.

The 78th Air Army changed the bases of its large units and units to reserve airfields, maintaining them at full combat readiness.

The primary basing and deployment areas of front and army rear service units and establishments were (Sketch 2): Ovruch, Korosten, Zhitomir, Malin, Fastov, Kiev, Mezhin.

During this time, the rear services of the front and of the armies were deployed on a base of stationary depots, military hospitals, repair plants and workshops.

At the beginning of the operation, missile-technical bases and depots were almost completely up to full strength in all types of supplies, and the remaining rear service units and establishments at 40 to 50% of the prescribed strength. The rear services of the combined arms and tank armies were at 50 to 60% of full strength at the start of the operation.

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During the course of the operation, the missing rear service units and establishments were to join the composition of the front and were able to go to work as they arrived in the area of combat operations.

At the beginning of the operation, reserves of materiel were generally maintained in the troops according to norms, with the exception of fuel. Reserve stocks at the mobile army bases of the 1st and 6th Armies were sufficient to meet the requirements of the troops for 24 hours while at the base of the 4th Tank Army, reserve stocks were not yet established.

At the stationary depots of the district, which were given to the 2nd Front, reserves of materiel were sufficient to meet the requirements of the troops available for 12 to 15 days. During this time, up to 50% of the reserve stocks were located on the east bank of the Dnepr.

At the front missile-technical base there were 148 missiles of the "surface-to-surface" (zemlya-zemlya) class.

By that time the front had 1,870 antiaircraft guided missiles.

At the front there were ten hospitals with an overall capacity of 3,000 beds which were fully occupied by patients with varying lengths of treatment.

Thus, the initial situation and, in particular, the situation of rear services support of the troops of the front, especially the missile troops, required that a whole series of measures be taken in the deployment and corresponding organization of rear services in the interests of fulfilling the assigned task.

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The commander of troops of the 2nd Front of the "East", Colonel-General of Tank Troops A.L. Getman, decided to launch the first mass strike with sixty-three nuclear warheads and twenty-four chemical missiles with the aim of destroying the primary groupings of nuclear/missile weapons and troops of the "West".

Following the first nuclear strike, the front, having concentrated its primary efforts in the direction of Shepetovka, Sandomir, Ostrava, went over to a determined offensive from lines at a distance of 30 to 40 kilometers from the national border.

The front allocated 101 nuclear warheads and 124 chemical missiles to fulfil the immediate task.

Forty-nine nuclear warheads and 79 chemical missiles were allocated to fulfil the subsequent task.

Thirteen nuclear warheads and 50 chemical missiles remained in the front's reserves.

The front had an operational structure of one echelon. Five divisions, including one tank and one airborne, remained in the front's reserves. Ten divisions were deployed in the first echelon of the armies.

The depth of the operation was 650 kilometers, the width of the offensive zone was 350 kilometers and the planned average rate of advance was 80 kilometers a day.

The troops of the front were assigned the following tasks:

The 3rd Army Corps - to launch a strike in the direction of Sarny, Kovel, Vlodava, to destroy the opposing enemy and by the end of the second day to occupy the Bol, Obzyr, Povorsk, Manevichi area. Subsequently, developing the offensive, by the end of the fourth day to seize a bridgehead on the

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Western Bug in the area of Vlodava. The corps was allotted 5 nuclear warheads.

The 1st Army - to go over to the offensive in the direction of Zdolbunov and Torchin and by the end of the second day of the operation to occupy the Rakitse, Torchin, Berestechko area. Subsequently, developing the offensive in the direction of Grubeshuv and Krasnystav to rout the approaching reserves of the enemy, to force the Western Bug quickly (s khodu) and on the fourth day of the operation to reach the Savin, Krasnystav, Zamostye area.

The army was allotted 31 nuclear warheads and 33 chemical missiles.

The 4th Tank Army - to go over to the offensive in the direction of Gritsev, Chervonoarmeysk, Sokal axis in coordination with the 1st and 6th Armies to rout the opposing enemy and by the end of the second day of the operation to occupy the Ivanichi, Ugnev, Velikiye Mosty area.

In developing the offensive in the direction of Zamostye, Annopol in coordination with the 93rd Airborne Division to force the Visla (Vistula) quickly and on the fourth day of the operation to occupy the area west of Sandomir.

Subsequently, in developing the success achieved, to reach the Ostrava area on the seventh day of the operation.

Thirty-two nuclear warheads and 42 chemical missiles were allocated for the operation.

The 6th Army - to go over to the offensive in the direction of Khmelnitskiy and Ternopol to rout the opposing enemy grouping of nuclear/missile weapons and troops, by the end of the second day of the operation to occupy the Podkamen, Zolochiv, Berezhany area and on the fourth day of the operation to reach the Lyubachuv, Yaroslav, Khyrov area.

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Twenty-nine nuclear warheads and 37 chemical missiles were allocated for the operation.

The 78th Air Army - together with the missile troops of the front, to launch a mass nuclear strike against the "West" using three atomic bombs and eight cruise missiles. During subsequent operations to continue the destruction of the nuclear/missile weapons, reserves and aircraft of the enemy, to support the offensive of the armies and also to cover the primary grouping of the troops and objectives of the rear services of the front.

To fulfil these tasks the army was allotted 49 nuclear warheads, including 24 cruise missiles.

The decision of the commander of troops of the front concerning the organization of rear services came to the following (Sketch 4).

Rear service support of the troops of the front was accomplished by stationary depots and by the rear units and establishments of the district with the simultaneous formation and deployment of front and army rear service large units and units.

In order to support the missile troops of the front, a front missile-technical base was set up consisting of the base HQ's five mobile-technical repair bases (remontno-tekhnicheskaya baza) and an independent missile transport battalion. Of these, two mobile-technical repair bases were designated to assemble the R-550 and KR-500 missiles to be supplied to the front's independent missile battalions and three mobile-technical repair bases to assemble R-30, R-170 and R-300 missiles, and each was deployed in the zone of the army which it supported. The missile transport battalion received missiles at the unloading stations of the front and transported them to the mobile-technical repair bases.

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To support the antiaircraft missile units, a front technical base for antiaircraft guided missiles (zenitnaya upravlyayemaya raketa - ZUR) was set up consisting of the HQ's; four technical battalions and one independent transport battalion.

One army missile transport battalion was set up for each army.

Subsequently, when at the beginning of the exercise it was discovered that the HQ's of the front missile-technical base and of the front technical ZUR base was a superfluous superstructure, they were disbanded on the instructions of the director of the exercise, Marshal of the Soviet Union Comrade Vasiliiy Ivanovich Chuykov and command of the missile-technical units was carried out directly by the chief of missile-artillery armament of the front and appropriate departments were created (Sketch 12).

Before the operation started, during 18 and 19 July, the missile-technical units of the front prepared 87 missiles with nuclear warheads and 44 with chemical filler, sending the majority of these to the troops.

The front's technical ZUR base assembled, prepared and, by the end of 19 July, sent 444 missiles to anti-aircraft missile units.

Depots of missile fuel were located in two areas - in the woods south of Zhitomir and in the woods north-east of Radomyshl.

In order to provide the troops with materiel, it was arranged for a section of the forward base of the front to be deployed south of Ovruch (150 kilometers from the border) and be functioning before the second day of the operation. The base itself was to be deployed on the second day in the Shepetovka area.

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The work of the rear supply base of the front in the area 30 kilometers east of Nezhin, and of its section 20 kilometers east of Yagotin, was planned to begin on 22 July.

After accomplishment of the immediate task by the troops of the front, it was arranged that the forward bases of the front should be brought closer to the troops, with the deployment of one section in the Kovel area and of the second in the woods northwest of L'vov.

In the zone of the front, three basic railroad routes were selected - northern, central and southern, together with two lateral routes.

During the operation the network of railroads was to be built up in two directions: Sarny - Chenstokhov, Shepetovka - Ostrava.

In all, four railroad brigades were deployed for the servicing, technical coverage (prikrytiye), and reconstruction of the railways.

To provide against the event of the destruction of the railroad bridges across the Dnepr, the laying of a floating bridge south of Kiev was provided for on the third day of the operation.

It was also decided to have three basic motor vehicle roads for the front and to prepare two lateral routes.

In order to ensure the most effective use of all the roads in the zone of the front, a road zone and a road traffic control area were organized within the system of military communications by the beginning of the operation.

During the course of the operation, the organization of three road zones (dorozhnaya zona) was planned, together with the designation of several road traffic control areas within these.

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Three road traffic control brigades were used in the preparation and during the course of the operation to service roads for motor vehicles and to establish road traffic control areas in the road zone of the front.

It was planned to use the 40th Bridge-Building Brigade, which arrived on 25 July, primarily to support the crossings of the Western Bug, San and Dnepr. Before the arrival of the brigade, two motorized rifle and one road-building battalions were charged with supporting crossings of the Dnepr, using Dnepr river transport resources.

In all, it was intended to organize ten ferry crossings across the Dnepr.

In addition, two crossings, temporarily set up to support the regrouping of troops, were used to ensure motor vehicle traffic across the Dnepr.

By the beginning of the operation, the laying of a field main pipeline was completed from the area of Zhidinichi along the line Malin, Novograd-Volynskiy extending during the course of the operation to Radekhov - an overall length of 600 kilometers. It was planned to lay a second pipeline starting on 21 July from an area 20 kilometers east of Shepetovka in the direction of Kremenets, Brody and Rava-Russkaya - also an overall length of 600 kilometers.

The daily total capacity of both pipelines was to consist of some 3,000 tons of gasoline and diesel fuel. Two pipeline brigades were charged with laying the pipelines.

After the report to the director of the exercise, substantial corrections were made in the overall organization of the rear services.

It was decided to refrain from setting up the front base on the left bank of the Dnepr and to expedite the concentration of basic reserve stocks on the right

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bank, in order to decrease the dependence of the troops on the Dnepr crossings. It was also decided to have primary reserve stocks in the zones of the 4th Tank and 1st Armies.

Measures were taken for the bringing up of reserve stocks from stationary depots on the left bank of the Dnepr to the troops of the 4th Tank Army and depots of the front's forward base.

To provide against the destruction of the crossings over the Dnepr, a reserve of forces and equipment was created to set up temporary transloading areas south of Kiev and north of Cherkassy.

In addition, the organization of rear services support for the regrouping of troops and the deployment of hospital bases and sections of these along the two primary axes of troop operations were envisaged and planned.

To support the shipment of wounded personnel being evacuated across the Dnepr, two hospitals with an overall capacity of 1,400 beds were allocated.

Evacuation of the wounded to front hospitals was provided for mainly by the motor vehicle and air transport of the front. The vehicular medical transport of the front available for evacuation provided evacuation for 2,000 persons in one trip and the medical aviation regiment - for 250 persons.

Since the rear services were actually deployed only in the 1st Army, permit me to dwell in somewhat more detail on its organization.

By the beginning of the operation, the mobile army base was to be set up northeast of Novograd-Volynskiy, 70 to 80 kilometers from the national border.


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An area 55 kilometers west of Zhitomir was assigned to the army missile transport battalion for deployment.

All five independent medical detachments were attached to divisions, of which three did not deploy at the initial position.

The motor medical (avtosanitarnyy) company was to ensure the evacuation of wounded from the regiments.

The motor transport battalions were designated to ensure the transport of materiel to large units and units of the armies from the army depots.

Two road traffic control battalions were to prepare and service the two basic motor vehicle roads and also to prepare two reserve and two control roads.

Control of rear services units and establishments was accomplished from the rear control post (tylovoy punkt upravleniya - TPU) of the army, which was set up in the woods 10 kilometers north of Novograd-Volynskiy.

Preparation of the rear services of the army for the rear support of troops in the operation entailed the necessity for the transfer of rear service units to a new area. This transfer was accomplished during the night of 20 July over a distance of some 150 kilometers in accordance with the directive of the front for rear services which was received at the TPU of the army after a very long delay - 20 hours after receipt by the army of the operational directive.

It was planned to transfer some 24 various units and establishments in the complement of the mobile base in 425 motor vehicles. All of these were consolidated in two columns, 12 to 15 kilometers in length. Some 15 hours were needed for the transfer of the base to the area designated.

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Ten hours were spent in transferring the TPU to the new area. During this time, control over the army rear services was completely lost because of the lack of communications with rear service units.

The organization of rear services in the 4th Tank and 6th Armies in the initial situation did not differ fundamentally from the organization of rear services in the 1st Army.

* * *

At 1845 hours on 19 July the commander of the front received a Headquarters directive which required him to bring the troops of the front to full combat readiness to go over to the offensive by 2400 hours, and to maintain missiles with nuclear charges at 30-minute readiness from that time.

However, indications of urgent preparation by the enemy for a nuclear strike put the commander of the front on the alert and forced his missile units to switch successively to 15-minute and then to 2-minute readiness.

Combat operations by both sides began at 0200 hours on 20 July with nuclear/missile strikes (Sketch 5).

The "West" used 43 nuclear warheads in the first mass strike which was delivered by aircraft and by cruise and ballistic missiles. During this strike, which lasted for 40 minutes, 18 major rail centers, 17 airfields, one mobile technical-repair base, the mobile army base of the 6th Army, 5 bridges and crossings on the Dnepr, 2 highway junctions and a missile fuel depot were destroyed.

The 2nd Front of the "East" used 27 nuclear warheads and 4 chemical missiles in its first nuclear/missile

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strike. Its effect was felt by the means of nuclear attack, airfields and troops of the enemy. The air army participated in this by delivering strikes by five cruise missiles and one atomic bomb on an airfield, on "Shanicle" radiotechnical systems, on a "Matador" cruise missile launch site and also with operations by fighter-bombers against the forward radar posts of the enemy with conventional means of destruction.

Following the nuclear/missile strike, the troops of the 2nd Front went over to the offensive and joined a meeting engagement with tank and infantry large units of the enemy in the border zone.

During the period from 0300 to 1200 hours, troops of the front moved forward to a depth of 15 to 20 kilometers in separate directions.

With the aim of developing a higher rate of advance by his troops and of destroying the nuclear means and the reserves of the "West", moving from the interior in the direction of Kremenets and Belgorodka, the commander of the 2nd Front decided at 1740 hours to launch a mass strike in the zone of the tank army with fifteen nuclear warheads and to rout the main grouping of the enemy by a decisive offensive.

By the end of 20 July, troops of the 2nd Front, having overcome the resistance of the enemy, advanced in separate directions to a depth of 60 to 70 kilometers (4th Tank Army) from the national border.

On 20 July, the missile-technical units of the front and armies were located in departure areas, and were thus separated from the missile troops by a distance of 170 kilometers at the end of the day. They continued to receive missiles arriving from the center, assembled them and delivered them to the troops (Sketch 6).

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During the day 33 "surface-to-surface" missiles and 320 antiaircraft missiles were delivered to the troops.

The work of the operational rear services proceeded under complex conditions during the first day of the operation.

As a result of nuclear/missile strikes by the enemy, the Bakhmach and Grebenka front regulating stations (rasporyaditelnaya stantsiya) were destroyed, together with about 20 large rail junctions, including Nezhin, Chernigov, Kiev, Zhitomir, Novograd-Volynskiy, Fastov, Kazatin and Berdichev; the bridges across the Dnepr in the Kiev, Stayka, Grigorovka and Cherkassy areas and across the Pripyat in the Yanov area were put out of commission.

The railroad network of the front broke down in isolated sectors and the transport of materiel from the large stationary depots located on the east bank of the Dnepr ceased completely. The front was also unable to receive transport and troop trains from the interior of the country.

In addition, a considerable portion of the territory of the rear service area of the front became contaminated with varying levels of radiation (Sketch 7).

The front sustained large losses in personnel, combat equipment and reserves of materiel.

Thirty-eight rail cars with missiles, about 24,000 tons of fuel, 1,500 tons of munitions, 580 tons of missile fuel, some 3,000 tons of rations, 21,000 sets of uniforms, and much other equipment was destroyed. At front and army depots, storage capacity for 38,000 tons of fuel was destroyed and 5 hospitals were also destroyed. Up to 250 kilometers of usable motor vehicle roads were contaminated.

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The wire communications system of the rear area of the front was 75 to 80 percent destroyed.

In this situation, the command element of the 2nd Front introduced the following changes in the organization of the rear services.

In view of the destruction of the regulating stations of the front, the troops coming to the front by rail detrained and continued further under their own power. In order to cross the Dnepr, forces of the bridge brigade using the crossing equipment of two divisions set up an additional pontoon bridge in the Pereyaslavl-Khmelnytsky area.

In order to let through trains with supply goods it was planned to set up a floating railroad bridge (NZhM-56 - naplyvnoy zheleznodorozhnyy most-56) south of Kiev by the end of 20 July and to make use of ferry crossings.

In order to ensure transshipment for materiel from the left bank of the Dnepr to the right, the front set up a temporary transshipment area from Kanev to Cherkassy on the morning of 21 July, designating the 3rd Front Base section of the 3rd Front Base to direct it.

A section of Forward Front Base No. 2 moved up to the Slavuta, Shepetovka, Dubrovka area in order to support the troops of the 1st Army and 3rd Army Corps. Front Base No. 3 moved up to the zone of operations of the troops of the 4th Tank and 6th Armies in the Krasilov, Zapadintsy, Staro-Konstantinov area.

The hospital bases which were set up on 20 July in the Novograd-Volynskiy and Khmelnyk areas continued to receive wounded personnel and casualties from the troops.

In the rear area of the front, work in eliminating the results of the enemy's nuclear attack was carried out. With this aim, two nuclear bursts on the 22nd Motorized Rifle Regiment of the 13th Motorized Rifle

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Division were simulated at the Tuchinskiy firing range (poligon). As a result of these up to 600 persons were presumed to have been hit.

The separate medical detachment of the 1st Army, which was used for the organization of medical evacuation measures in centers of damage, arrived at the site within 3 hours and 45 minutes and went to work one hour later. Evacuation of wounded personnel and casualties from the centers was completed in 24 hours.

By the end of 20 July the sector of pipeline from Rykhalskaya to Dubnevka had been extended by a distance of 60 kilometers and put into operation. The overall length of pipeline in operation reached 360 kilometers. In a day of the pipeline's operation, 800 tons of fuel were actually pumped through it.

In view of the destruction of the stationary depot of missile fuel in the Buyan area, air transport was used to replenish the reserve stocks.

By the end of 20 July, the mobile army bases had fallen considerably behind the troops. Thus, for example, the mobile base of the 1st Army was located in the Staraya Guta, Yablonoye, Kiyanka area at a distance of 100 kilometers from the forward large units. The mobile base of the tank army moved to the Velikiye Korovintsy, Ivanopol, Ozadovka area, in all only 40 kilometers. It became separated from the troops by more than 120 kilometers in the first day of the operation, which created great difficulties in organizing the transport of materiel.

In view of the fact that the mobile base of the 6th Army was completely destroyed by the enemy's nuclear strike, further support of the army was directly accomplished by the forces and equipment of the front.

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During 21 July the troops of the front developed a swift offensive, repelling counterattacks by reserves of the "West" in separate directions.

The "West", delivering nuclear strikes against troops, control points and objectives in the rear area of the "East" conducted delaying operations and by 2000 hours had fallen back to the line Ternopol, Dubno, Povorsk.

During this day the "East" thus advanced to a depth of over 120 kilometers with the forward units of the 4th Tank Army and of 80 to 100 kilometers with other units.

The operational situation during the second day of the operation did not require the commander of the 2nd Front to make new decisions. Success was exploited by the use of nuclear and chemical weapons and by committing the second echelons of the armies to battle.

During the course of the day the front and the armies used 19 nuclear warheads, the larger portion of these in the zones of the 4th Tank and 1st Armies.

During the day one division from the complement of each of their second echelons was committed to battle as the result of decisions by the commanders of the 4th Tank and 6th Armies and also by the commanding officer of the 3rd Army Corps.

At 1410 hours, a nuclear strike by the enemy put out of commission the command post (komandnyy punkt - KP) of the front which was located south of Zhitomir. Control of the troops was carried out from the alternate command post (zapasnoy komandnyy punkt - ZKP) in the Baranovka area, at which a communications center had previously been set up.

The 78th Air Army continued to support the troops of the front, having allocated half of the planned regimental sorties by fighter-bombers, 7 front cruise missiles with

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nuclear charges and three nuclear bombs to the support of the combat operations of the 4th Tank Army.

In the first half of the day, the 78th Air Army delivered strikes with three cruise missiles with nuclear warheads against the enemy's nuclear weapon depots in the area southwest of Rovno and with four cruise missiles with chemical filler against his troops to the west and north of Dubno.

During the day, units of the air army carried out a total of 450 aircraft sorties (samoleto-vylet).

In developing the offensive, troops of the front advanced up to 180 to 190 kilometers in the direction of the main strike in two days of the operation.

On 21 July, the missile-technical units of the front and armies were transferred to new areas. In a day they assembled and delivered to the troops 20 "surface-to-surface" class missiles and 300 antiaircraft missiles.

The maximum distance separating the missile-technical units from the troops reached 200 kilometers and the minimum was 20 to 30 kilometers.

Units of the front and army rear services, continuing to eliminate the results of the enemy's nuclear attack, carried out materiel, technical and medical support of large units operating in wide zones in separate directions.

The forward front bases, in order to move reserve stocks of materiel nearer to the troops, moved out to areas 15 kilometers northeast of Shepetovka and 10 kilometers north of Staro-Konstantinov, having reserve stocks for 1½ to 2 days.

In order to support the large units and units subordinate to the front and to transship goods across the Dnepr, sections of these bases were dispatched to areas north of Korosten and Kaniv.

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The mobile base of the tank army was transferred to the Pochayev area and of the 1st Army was located in the Former area, 150 kilometers from the troops (behind the forward front bases), where it eliminated the results of the nuclear strike.

By this time, rail traffic had been successfully restored through Belokorovich to Sarny and through Kalinovka to Staro-Konstantinov, which permitted the delivery of goods from the section of Forward Front Base No. 2 for large units of the 3rd Army Corps and the transfer of fuel reserves from the stationary depot in the Kazatin area to the Staro-Konstantinov area.

A road traffic control service was actually organized by the forces of the 21st Road Traffic Control Brigade and of the 98th Independent Road Traffic Control Battalion on motor vehicle roads of the front and of the 1st Army.

In a 24-hour period about 20,000 tons of various supplies were brought up by all types of transport. The pipeline brigade extended the pipeline by 80 kilometers on 21 July and actually pumped 750 tons of diesel fuel for a distance of 440 kilometers.

Material reserves in the front as a whole and also in the army mobile bases and among the troops were noticeably diminished, but still permitted the conduct of active combat operations for several days. However, about 40 percent of these supplies were located east of the Dnepr as before.

Medical losses for the day were also great. Two sections from the hospital bases were moved forward by the end of the day to collect wounded from the troops and to afford them specialized medical aid. Evacuation of wounded was carried out over a distance of from 50 to 100 kilometers by the medical transport of the front and armies.

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The separate medical detachments of the 1st Army which were actually brought into the exercise, developed an organization to render medical aid to casualties from toxic chemical agents of the "Sarin" type, for which a chemical attack by the enemy was simulated on the Tuchinskiy firing range, as a result of which there were presumed to be up to 500 casualties.

Rendering aid to the casualties was carried out by the 84th Independent Medical Detachment, which arrived at the center of damage one hour after the launching of the strike.

* * *

In the situation which had developed by the end of 21 July, the "West" decided during the night of 22 July to hold with its basic forces a line along the west banks of the Seret, Ikva and Styr rivers, to withdraw part of its troops to organize defense on a line along the Zolotaya Lipa, Western Bug and Turya rivers, and beginning on the morning of 22 July to deliver a strike with 15 nuclear warheads on the main forces of the 4th Tank Army of the "East" in the Podgortsy, Brody, Kremenets area and complete their rout with a counterstrike: by the 8th Armored and 15th Infantry Divisions from the line of Nikolayev, Demidovka, in the direction of Berestechko and Kremenets; by the 3rd Division with a tank group and by the 2nd Armored Cavalry Regiment from the line of Sborov and Snovichi in the direction of Zborov and Pochayev.

Troops of the 2nd Front continued combat operations along the primary directions. The commander of the front decided, in delivering nuclear/missile and chemical strikes against the approaching reserves of the enemy, to develop the offensive in the direction of Brody, Tomashuv and Zamostye.

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In order to fulfil the tasks allotted, the following allocations were made: to the 1st Army 2 nuclear and 4 chemical warheads, to the 4th Tank Army 6 nuclear warheads and to the 6th Army 3 missiles with chemical filler.

The reserves of the front were brought up to the line of the front by the morning of 22 July and the armies brought in their second echelons to develop the offensive.

At 0700 on 22 July, the "West", with the aim of defeating the main forces of the 4th Tank Army and of containing the offensive of the "East" in the direction of Lvov, delivered a counterstrike using 15 nuclear warheads against the flanks of the army with the forces of the 6th Armored and 15th Infantry Divisions from the Berestechko area and with the 3rd Division and a tank group from the Pomoryany area in the general direction of Kremenets.

As a result of the counterstrike, the "West" succeeded to some extent in squeezing the troops of the 1st and 6th Armies and in reaching into the Chervonovarmeysk and Zalozhtsy areas.

During the day of combat, troops of the front, having repelled the counterstrike of the "West", and bringing second echelons of the armies into the battle, advanced 40 to 50 kilometers and gained the line Kovel, Studinka, Chervonograd, Kulikov, Zborov, Podgaytsy.

In the course of a 24-hour period, by means of raids by aircraft and by missile strikes, the enemy put out of commission the rail junctions of Shepetovka and Staro-Konstantinov.

Considerable losses were sustained by the rear services of the 1st Army, which until then, as previously, stayed in the area northeast of Novograd-Volynskiy. The pontoon railroad bridge which was laid in the Kiev

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area was also destroyed. A large number of wounded were accumulated in the armies.

The mobile army base of the 1st Army was transferred to the Zdolbunov area, and the mobile army base of the 4th Tank Army was brought up toward the combat formation of the divisions.

The organization of the rear services of the 6th Army did not undergo substantial changes and its troops continued their support work primarily with the forces and equipment of the front's rear services.

In order to restore railroad traffic across the Dnepr, it was envisaged by the morning of 24 July to establish two ferry crossings with a traffic capacity of 10 trains (in one direction) at the center line of the destroyed pontoon railroad bridge. At the same time, the task of constructing a low (nizkovodnyy) bridge in this same area (parallel to the destroyed bridge and using the approaches to it which remained) was assigned.

On this day, the bringing up of materiel and the evacuation of wounded to hospital bases of the front, using air transport, was increased. In 24 hours up to 900 tons of goods were brought up and more than 5,000 wounded were evacuated. Using AN-12 and AN-8 aircraft, 6 missiles and 166 tons of various goods were actually brought up to the Sitno airfield area and 150 presumed wounded were evacuated. Fifty to 60 minutes were spent in converting AN-12 aircraft from the transport to the medical version.

Considering the future development of the operation, it was planned to move part of the forces and equipment of the rear services of the front closer to the armies. Specifically, beginning on 24 July, it was envisaged that a section of the 3rd Forward Front Base should move to the Magerov area (west of Lvov) and also one section of the 6th Hospital Base of the Front was prepared to move on 23 July to an area west of Kovel.

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During the third day of the operation, four mobile technical repair bases, two army missile transport battalions and one independent technical battalion were transferred for a distance of 145 to 220 kilometers to new areas.

The maximum separation between missile-technical units and the troops on this day was 30 to 50 kilometers.

Units of the rear services of the air army restored materiel and technical facilities at the Novograd-Volynskiy and Chortoriya airfields and also established reserves of fuel and munitions at the Stepan, Sosnovka and Krasilov airfields which had been captured from the enemy.

On 22 July, 29 missiles of the "surface-to-surface" class and 308 antiaircraft missiles were prepared and delivered to the troops.

In the situation which had arisen, the 5th Army, composed of four divisions, arrived from the reserves of the Headquarters (Stavka) of the Supreme High Command to reinforce the 2nd Front (Sketch 8).

By decision of the Commander of the 2nd Front, the 5th Army was designated to go into battle on the morning of 25 July with the task of swiftly developing the advance of the troops of the front from the line Ilzha, Ivaniska in the direction of Radosko and Volchin and by the end of 27 July of occupying the Verishuv, Lyublinets, Chenstokhov area.

In view of the participation of the 5th Army, the rear services of the front were additionally strengthened with six motor vehicle transport battalions in the Vinnitsa area and with a hospital base with 10,000 beds and six separate medical detachments in the Uman area.

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In concluding an account of the course of the combat operations, I consider it necessary to report briefly on the measures and work actually accomplished in the exercise, which have the greatest practical significances. The capabilities of a number of units and large units in providing materiel and technical support both in the period of preparation for an operation and during the course of it were checked and established.

Thus, in the exercise, 75 missiles were actually delivered to the front by air, rail and motor vehicle transport.

Twenty-six missiles were actually assembled and delivered to the troops by the mobile technical repair bases and six antiaircraft missiles by the independent ZUR technical battalions.

Twelve AN-12 aircraft of the 6th and 3 AN-8's of the 12th Military Air Transport Divisions were used to ship missiles and materiel by air.

In addition, aircraft moved 200 tons of freight, including 100 tons of munitions, 80 tons of fuel and 20 tons of rations; of these, 24 tons of munitions, 5 tons of fuel and 5 tons of rations were delivered by parachute.

The 50th Pipeline Brigade extended the pipeline by a length of 600 kilometers from Zhidinichi to Radekhov. 4,800 tons of diesel fuel were actually pumped along the pipeline.

The missile fuel depot received 181 tons of missile fuel and distributed it to the missile-technical troops.

The missile fuel transport battalion shipped 48 tons of missile fuel for a distance of 350 kilometers.

From 22 to 24 July, the motor transport battalion of heavy duty trucks which was formed during the period of the exercise actually accomplished the shipment of

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a tank regiment (98 tanks) from the Ovruch area to the Lutsk area and back, over a distance of more than 500 kilometers.

During the exercise, engineer troops prepared (oborudovat) the disposition areas of the 5th Mobile Technical Repair Base, of the army base of the 1st Army and of the front missile fuel depot and also the areas in which the KP, ZKP and TPU of the front were located.

In addition, about 100 square kilometers were checked for mines, 80 kilometers of roads were graded and 15 bridges were repaired.

The road traffic control brigade organized 250 kilometers of dirt roads and serviced 600 kilometers of motor vehicle roads.

The independent medical detachments carried out the evacuation of 1,100 presumed wounded personnel by motor vehicle transport and 150 by aircraft.

On 20 July, an independent evacuation company was deployed in the area of the Tushinskiy firing range and carried out practical work in the evacuation of damaged vehicles in the center of an atomic burst.

* * *

Some comments on the operations of the independent mixed helicopter regiment.

All the helicopters of the regiment were equipped to transport nuclear/missile weapons.

The regiment was allotted to the chief of the missile and artillery armament of the front. During the first day it shipped 32 missiles and 11 warheads, for which 40 helicopter flights were used.

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The task of shipping 26 missiles and 11 warheads from their unloading stations to the disposition areas of the mobile technical repair base, over a distance of 250 to 300 kilometers, was accomplished by the regiment in 7 hours.

The exercise showed that, in cases when it is impossible to bring transport with missiles closer to the troops by rail or motor vehicle in directions where crossings are destroyed, the loading of helicopters with missiles can take place at a considerable distance from the disposition areas of a mobile technical repair base. In this case, helicopters are forced to make flights whose total range in both directions is some 850 to 900 kilometers, which requires one or two refuelings with landings at fields prepared for these purposes.

This obliges one to examine the problems involved in developing the most mobile rear service subunits to support helicopter operations.

* * *

Permit me to dwell on some of the questions of the control of troops and the organization of communications in the exercise.

The exercise showed that front and army staffs have not yet fully grasped the art of working out a plan for an operation in a limited time and that they were late in formulating the decisions of the commanders and in delivering these to the troops.

Thus, in the 6th Army, combat missions were only delivered to the troops 10 hours after the decision had been taken by the commander of the army.

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The situation was even worse in the 1st Army. The combat orders committing the 28th Motorized Rifle Division to battle were sent to the division by cypher at 1120 hours on 21 July but were only handed to the commanding officer of the division at 1630 hours, when the division was supposed to enter the battle already by 1100 hours on that day.

Essentially, the commander and chief of staff did not concern themselves with organizing the commitment to battle of this division. As a result, it was detected by the enemy and subjected to a nuclear strike and was unable to go into battle.

Cases of an irresponsible attitude toward the deciphering of combat documents were noted in the exercise. Important enciphered messages, requiring the establishment of a 24-hour tour of duty (dezhurstvo) for missile batteries together with signals giving information on opening fire were deciphered in the 28th Division 15 hours after they were received. The parties responsible for such a disgraceful state of affairs should be punished.

The proper procedure was also not observed in determining the stamp (grif) to be put on documents. Officers of the staff of the front unnecessarily abused the priority of the series "G" stamp. Ninety percent of all correspondence went out under this series. Really important and urgent combat documents were buried and held up. This was the case, for example, with the attack order for the 3rd Army Corps.

The timely dispatch of tasks to the troops was not controlled in certain staffs and commanders were misled, being confident that troops were operating according to the instructions they had been given.

We must organize the work of staffs in such a way that any instruction given by a commanding officer is written down in the staff with a note of the time and of the name of the writer. Without this, it is impossible to establish who is guilty of creating confusion or to organize control over the performance by the troops of a task which has been received.

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We shall gradually introduce to staffs sound-recording equipment which will facilitate the recording of instructions which are issued. At present, however, when staffs have not yet received this equipment, all instructions by officers of staffs should be precisely stated. With great regret, it must be observed that certain generals and officers in the evaluation of their work in the control of troops embarked on the path of direct deception of the directors of the exercise. Thus, because of mismanagement by the chief of the missile troops and artillery of the 1st Army, General Mitakevich, the siting area of one of the battalions of the 23rd Army Missile Brigade was located for a long period of time within the range of the enemy's tactical missiles. General Mitakevich reported to General of the Army Comrade A. S. Zhadov that the battalion had been given instructions to change the siting area. However, a check showed that no such instructions were given.

In the staffs of formations and large units, a proper tendency was shown toward a decrease in the overall quantity of documents being formulated and toward an increase in their clarity and terseness. However, as in the past, many staffs are still formulating a large quantity of bulky documents in preparing for an operation, some of which are not in practice used for control of troops. This applies especially to documents of arms of troops and of services. The working maps of staff officers are overloaded with a large quantity of all kinds of references and tables. Much time is expended in covering maps with drawings, to the detriment of the lively control of troops.

We must resolutely check ourselves from verbosity in documents and in conversations conducted over technical means of communications.

Documents of the staffs of formations and large units which were worked out by them during the exercise and which have been reviewed and studied by us indicate that the majority of them suffer from carelessness and slipshodness in formulation, were worked out in a hurry and without correct operational practice and are even without any indication of the time of signing.

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Serious omissions were observed in the organization of the service for information on the situation at the control points of the front and of armies. Within the field control of the front, operational information was put out irregularly. In view of this, generals and officers of the arms of troops and of services were forced continually to address themselves to the operational control of the staff of the front, thus disrupting the organization of its work.

Because of the lack of precise information, chiefs of the arms of troops and services in formations and large units found out about the operational situation very late and were unable to react to its changes in good time.

In the exercise which was conducted, three control points were established in the front and in the armies: KP, ZKP and TPU. The alternate command posts were headed by the deputies to the commanders of troops of the front and of the armies and included in their complement responsible representatives from the combined arms staff and from the chiefs of arms of troops and services.

At the ZKP of the 2nd Front there were in all 93 persons, headed by the deputy to the commander of troops of the front, Colonel-General K.I. Provalov. The number of personnel at the ZKP of the front exceeded the number at the previously created forward command posts by 25 to 30 persons.

At the ZKP, the necessary means of communications, permitting the assumption of control of the troops in the event that the command post should be put out of commission, were set up and kept at constant readiness.

Information on the situation of the troops reached the ZKP with a delay of 1½ to 2 hours. Thus, by 1400 hours on 21 July when the command post was excluded from the exercise and the ZKP took over the control of the troops, data on the situation in the zone of the front was available at the ZKP only according to the status (sostoyaniye) at 1200 hours.

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We must think about and eliminate the shortcomings in the receipt of information at the ZKP.

At the ZKP of the front, regular records of the most important instructions and orders issued from the command post were also not maintained, and the position and status of the missile troops and of rear service units and establishments were not fully considered. The ZKP of the front was not even entrusted with control over the arrival in its area of each unit or installation.

Questions of the location of the ZKP and also of the organization of its communications with the command and rear area control points and with the troops also need to be carefully worked out.

In the exercise, the ZKP of the 2nd Front was located in the main direction, 90 kilometers from the command post. We believe that such a distance must not be regarded as normal. In order to ensure stable multi-channel communications between the ZKP and the KP of the front without expenditure of a large quantity of means of communications, the distance between these control points should not exceed 30 to 40 kilometers. With the same objects, the ZKP of armies should probably be deployed at a distance of 10 to 15 kilometers from the command post.

Some words on the procedure of moving control points. Many staffs did not give due attention to this problem. KP and ZKP of the armies were usually moved once in 24 hours, which, with high rates of advance led to their sharp separation from the troops.

Thus, the KP and ZKP of the 6th Army in individual cases remained 140 to 150 kilometers behind the first echelon troops, as a result of which it took some 10 to 12 hours to set up communications for these control points in new areas and to move the command and staff there.

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During 20 July, the KP of the 4th Tank Army was 120 to 140 kilometers from the troops and in the second half of the following day the separation reached 160 to 180 kilometers and more.

Still worse was the situation concerning the control of rear service units and establishments during the transfer of the rear area control points of the armies. The lack of second positions for the communications centers of these points did not permit previous preparation of communications from their new areas of location. As a result of this, during the time required to move the TPU, that is, for almost 10 to 12 hours, the direction of rear services of the armies in practice ceased completely.

In the given exercise, particular attention was given to the problems of ensuring communications for the control of the missile-technical units of the front and army and of the rear services as a whole.

The experience of the exercise showed that stable control of the operational rear services is possible now only with the existence of a special communications system with wide ramifications, based on the combined use of all existing means of communication, but without going to excess. The most important communications of the rear services must be made secure by means of automatic encoding equipment.

Sketch 9 shows the organization of the basic communications of the 2nd Front. On this, the instructions of the Commander-in-Chief on organizing the control of missile-technical units of the front directly from the rear control point are taken into account.

The basic wire and radio-relay communications of the chief and staff of the rear services of the front with subordinate units and establishments are axial (osevoy) and lateral (rokadnyy) lines of the overall communications system of the front and auxiliary communications centers set up at the places where they intersect. The multi-

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channel telegraph and telephone communications of the TPU of the front with the primary and alternate command posts of the front and rear control points of the armies and also with primary large units, units and establishments of the rear services of the front are conducted on these lines.

In order to hook the auxiliary communications centers into the overall communications system of the front, a special radio relay-cable communications battalion is at the disposal of the staff. The reception of communications channels at the TPU of the front and organization of the internal and, partially, long-range communications is accomplished by the organic resources of the TPU. In addition, the basic rear service elements have their own small communications subunits which enable them to establish communications with the nearest auxiliary communications centers and to set up the necessary internal communications. This should apply primarily to front bases, including missile, pipeline and road traffic control brigades, railroad brigades and other units.

It is understood that the details of this communications system of the rear area still need elaboration and provision in the organizational+TOE respect, especially for missile-technical units.

The experience of the exercise showed that it is necessary to bring order to the system of controlling all the numerous rear service units and establishments, especially those which operate at a great distance from the TPU of the front and from their respective bases. It would be meaningless to pose the question of organizing direct electrical communications with each of these. We must consider the possibility of their territorial consolidation with certain major rear service elements, through whose centers they could receive instructions on their work and could transmit essential messages. Such elements could be the various bases of the front, regulating stations, the command of road traffic control brigades, etc.

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For radio control over the work of the radio network of the 2nd Front, an operational radio intelligence group actually operated.

As a result of the check, during 18 July the work of six radio networks and of the point-to-point radio nets (radionapravleniye) was monitored. However, no intelligence information was obtained from their work, since the radio nets worked for short periods to test radio communications. But at night on 19 July, the radio nets of the front changed their previously established working procedure sharply. This could furnish radio intelligence with a basis from which to conclude that the troops of the 2nd Front had been brought to increased combat readiness.

By the morning of 21 July, radio direction-finding had determined the location of the KP of the 2nd Front and of the KPs of the 1st Army, 3rd Army Corps and the 21st Front Missile Brigade.

Unfortunately, the order of the Minister of Defense, the directives of the General Staff and of the Main Staff of Ground Troops and, also, the instructions of the directors given before the start of the exercise on the question of covert (skrytyy) control of troops were buried in oblivion by certain generals and officers.

Many generals and officers disregard the fact that not far from the borders of the Soviet Union there are some 2,000 radio intercept posts of American radio-intelligence which intercept the work of military radio stations on a large scale, especially during exercises.

It must be stated that the messages transmitted over open radio channels were fully sufficient to determine the location and nature of the exercises being conducted. This must not be considered normal. After the troops had been informed by the directing staff of the concrete facts of the crude breaches of the rules of covert control of troops, conversations over radio and radio-relay channels practically ceased. This is also improper. It is necessary to achieve a position in which radio and radio

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relay communications, as the basic means of communication, are used without breaches of the rules of covert control of troops.

* * *

Comrade generals and officers!

The exercise which was conducted placed before the Main Staff and apparatus of the Commander-in-Chief of Ground Troops, before the staff and apparatus of the Chief of Rear Services of the Ministry of Defense, before the Academy of the General Staff, the Academy i/n M.V. Frunze, the Military-Engineering Academy, the Academy of Rear Services and Transport and the collectives of the professor-instructor (professorsko-prepodavatel'skiy) personnel which took part in our exercise, a series of great and urgent questions which still need a great deal of serious work.

Our joint work during the course of several days, observation of your laborious and strenuous labor and of all the defects which were disclosed during the exercise, permitted us to determine the main questions that require further clarification and resolution and also an understanding of the directions along which our assistance to troops and staffs is most needed.

We gained a great deal in this exercise, as I hope that you also learned a great deal.

In this is the basic and great meaning and significance of all the work which was accomplished.

Permit me, Comrade Marshal of the Soviet Union, to conclude my report at this point.

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REPORT

of the Director of the Exercise

Commander-in-Chief of the Ground Troops

Marshal of the Soviet Union V.I. CHUYKOV

Comrades!

The operational-rear services exercise has been conducted by us in a situation in which the Soviet people are preparing for the honored meeting of the XXIInd Congress of the Communist Party of the Soviet Union. The particular significance of this Congress - said Nikita Sergeyevich Khrushchev at the graduation of students of the military academies - lies in the fact that it will adopt a new Party program, in which the main tasks in economic and cultural construction, in the field of foreign politics, in the Communist education of people will be defined and the specific paths of the Soviet people's movement to Communism will be pointed out.

The enemies of peace and of Socialism are afraid of the victorious progress of the Soviet Union toward Communism and are trying to deal with us by means of military threats. Our Party and government, knowing the predatory habits of the imperialists, are taking all measures to strengthen the economic and military might of the Soviet government. But this might does not threaten the world with war. On the contrary, it is the dependable guarantee of the peace and security of the peoples.

West Germany is now becoming the main breeding-ground of military danger. On its territory, besides its own 12 divisions, the main strike forces of NATO are deployed aimed at the countries of the Warsaw Pact.

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The command element of NATO makes every effort to kindle the revanchist feeling in the Bonn militarists and to set up a massive West German army in the near future, as the main striking force of the Western powers for the achievement of their imperialistic goals.

The Bonn revanchists, instigated by the ruling circles of the U.S.A., Britain and France, are taking intensive measures to strengthen their military position in West Berlin - this cancerous growth on the body of the German people.

The Soviet Government is showing determination in the matter of concluding a German peace treaty, being convinced that if measures are not taken now to normalize the situation in Germany, and in particular in West Berlin, the people might find themselves faced with the fact of aggression by the West German militarists and the unleashing of a world war.

A peace treaty, Nikita Sergeyevich Khrushchev has repeatedly indicated in his speeches, will be signed this year. In this connection the possibility of provocation by the aggressive NATO bloc should not be excluded. Therefore the Central Committee of our Communist Party demands of the Armed Forces great vigilance and constant readiness to offer a reliable defense of the interests of the Soviet Union and of the other countries of the Socialist Camp at any moment.

The Soviet Government persistently tries to achieve the establishment of a durable peace throughout the world, the respect of sovereignty and non-intervention into the internal affairs of other countries. No other government in the world has done as much as the Soviet Union in the matter of ensuring durable peace and international cooperation.

The ruling circles of the imperialistic states, under all kinds of pretexts, continue to ignore the proposals of our government for disarmament and international cooperation, speeding up the armament race and preparing to unleash a new war.

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In his recent message to Congress, President of the U.S.A. Kennedy proclaimed a "new course of action". This provides for the speeding-up of the program of nuclear/missile armament, for the heightening of the combat readiness of all types of armed forces and for an increase in the military appropriations of more than three and a half billion dollars. These dollars and the "new course of action" are directed against the peaceful aspirations of the Soviet Union and of the whole Socialist Camp.

The strengthening of the aggressive military-political bloc of NATO continues, it already has in its composition 50 divisions at constant readiness, more than 50 missile and artillery units able to use nuclear warheads, and a considerable number of aircraft. Besides this, in the countries which have entered NATO themselves, there are an additional 52 divisions which are maintained in a high state of readiness for mobilization.

All this tells us that we must continuously improve our knowledge, discover the most effective methods of armed combat and maintain our means of combat in a high state of readiness for powerful counterblows against an aggressor. The operational-rear services exercise which we have conducted, which was one of the important measures in the operational training of the current training year, was dedicated to this goal.

* * *

Experience of conducting war, shows with complete clarity, that the outcome of a battle, of an operation, and of a war as a whole depends, to a great degree, on the organization and work of the rear services. In speaking of the role of the rear services in a war V.I. Lenin explained: "The best army, the persons most dedicated to the cause of the revolution, will be immediately destroyed by the enemy, if they are not armed, provided with rations and trained to a sufficient degree".¹

1. Lenin, Works, volume 27, page 54

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World War II confirmed the great role of the rear services in the attainment of victory over the enemy. The front constantly demanded a large amount of varied combat equipment, munitions, fuel, rations and other materiel supplies. All our industry, agriculture, transport, human and materiel resources were put to the service of the front, thanks to which the rear service successfully fulfilled its great and critical tasks.

A future war, if the imperialists unleash one, will be a nuclear/missile war. In order to conduct and conclude it successfully, enormous moral, military and economic efforts will be demanded from the people of the Socialist countries.

We must realize very clearly that in this war not only the operational rear services of the army but, first of all, the deep rear of the country, will be subjected to massed nuclear/missile strikes.

The possible disruption of the functioning of communications will hinder the operational solution of questions of replacing massive losses at a time when the operating troops will demand the timely delivery of nuclear/missile weapons, hundreds of thousands of tons of fuel, munitions and foodstuffs and the evacuation of tens of thousands of wounded and contaminated personnel.

New means and methods of armed combat have introduced substantial changes in the volume and content of the tasks performed by the operational rear services.

First of all the expenditure of materiel supplies in combat and in operations has increased. If in World War II the front used some 20,000 tons of fuel in an offensive operation, under modern conditions its needs might be 100,000 to 120,000 tons or more. Here, the appearance of the missile weapon, and also, together with it, of special types of fuels and oxidizers, has necessitated the creation of special new large units, units and subunits to prepare and transport missiles, and also to provide troops with the missiles and with fuel for them.


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The volume and the assortment of other materiel supplies required by the troops have also increased considerably. For a front operation lasting 8 to 10 days the operational rear services will have to deliver a total of 200,000 to 250,000 tons of various goods to the troops. These goods will have to be delivered while an operation is developing at 80 to 100 kms a day. The performance of these tasks cannot be compared in any way in their complexity with the tasks of supplying troops in the past war.

The massive putting out of commission of combat and special equipment, which may reach from 50 to 80 percent during a front operation, will make it necessary for the rear services of the front to assume the whole burden of repair and restoration. The efforts of the repair facilities of large units must be directed toward the restoration of the slightly damaged equipment in order to return it as soon as possible to the formation and to ensure the conduct of combat operations at high speeds.

Now the organization and execution of medical support for the troops is becoming considerably more complicated. Medical losses (sanitarnaya poteriya) will increase sharply and will be characterized by extreme variations during the different days of the operation. Now combined casualties (kombinirovannoye porazheniye) will predominate, requiring the creation of new, specialized medical institutions.

The increased volume and the qualitative change in the tasks of the rear services demand unity in their organization, coordination and close cooperation of all elements, irrespective of the organic subordination and the specific nature of the tasks being fulfilled. This must be ensured by the centralized resolution of all questions concerning the organization of the operational rear services in the hands of the deputy commander of rear services, and by the constant control of the rear services by the commanders and their staffs.

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The Chief of Staff and the chief of engineer troops of the front did not assist the chief of Rear services in the performance of this task, which was difficult for him.

In deciding on the organization of the operational rear services the command of the front did not pay due attention to so important a question as the supply of missile troops with ready missiles. The control of the missile-technical large units and units of the front was not organized. The tasks of the front missile-technical base in supplying missiles to the troops were not assigned in good time, as a result of which, up until 0500 hours on 19 July, all the missiles prepared for launching were located in the missile transport battalion and the missile brigades moved out to their siting areas without missiles on the launch mounts. The plan for missile delivery to the troops was not thought out as it should have been. As a result of this the 6th Army had to receive missiles simultaneously from three mobile technical repair bases one of which was the 6th - which was located 250 km from the troops of the army.

The Chief of the Directorate of Missile and Artillery Armament of the Front, Colonel V.K. Kolontsev, was with the Chief of the missile troops and Artillery most of the time and carried out strictly technical work, compiling memoranda, lists, and charts and, in fact, was removed from the fulfilment of his direct responsibilities of organizing the delivery of missiles to the troops.

The staff of the front showed no concern about organizing close cooperation between the rear services staff and the chiefs of the arms of troops and services and did not ensure clear-cut planning of the delivery of missiles to the troops. This was particularly evident from the reports and planning documents of the deputy commander of the troops of the front's rear services and of the chief of the directorate of missile-artillery armament. It is hard to imagine more uncoordinated operations than those of these two responsible chiefs. The plans for rear services support, compiled by the rear services staff, showed certain freight unloading stations - while the chief of missile troops and artillery designated others.

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In the organization of the rear services, measures for the medical support of the troops in the event that the enemy delivered the first mass nuclear strike were not envisaged. The staff of the front did not direct the military-medical directorate of the front to do this, while the latter did not consider it necessary to work out this question and used average daily casualty figures in its plans and calculations for the entire operation. This is the same as if one were to take the average daily temperature of all the patients in a hospital and, on this basis, to prescribe the same medicine for all.

The backbone of the rear services organization in an operation is the network of communications routes. The network of railroads and motor vehicle roads in the zone of the front was, basically, correctly defined in the decision. However, in the preparation and buildup of the network of communications routes a mistake was tolerated. Instead of 5 to 6 motor vehicle roads that the front could have serviced, only three were planned.

The chief of military communications of the front, Major-General of Technical Troops A.A. Sinyagovskiy, did not consider the possible variations for moving freight across the Dnepr in the event that the means of crossing were put out of commission. In general, Comrade Sinyagovskiy showed a weak knowledge of the railroad network which is actually in operation and of the motor vehicle road network in the territory of the Carpathian and Kiev Military Districts, even though he has been stationed in the Carpathian Military District (PriKVO) for three years already. Apparently, he is guided by the dictum of the mother of Mitrofanushka in the comedy "Ignoramus" ("Nedorosl") by Fonvizin, that there is no reason to study geography if there are cabmen.

In organizing the operational rear services, little attention was given to ensuring the stability and viability of its basic objectives. The rear services units and installations were often located close to other likely targets for nuclear attacks, were densely disposed, tied to main road functions in populated points, and even in towns. Such a piling up of rear services units occurred, for example, in the area of Zhitomir. At the same time,

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the requisite cover for operational rear services installations was not provided for by the Chief of the PVO of the Front, Major-General V.A. Yermolov.

In general, the decisions of the army commanders and corps commander conformed to the situation which had developed. However, they were not without important faults.

The Commander of the 4th Tank Army, Lieutenant General of the Tank Troops V.Z. Bisyarin, made the missions of the first echelon divisions too deep. (Diagram 3) There was little likelihood that these two divisions could move 100 to 120 km in the first day of the operation, having before them an enemy army corps. Apparently the calculation was made on the assumption that the enemy would not bring the second echelon of his corps into combat on that day. But there were no grounds for this assumption. Besides, to have carried out such a deep mission there should have been provision for the delivery of a massed nuclear strike against the enemy's reserves from the army zone during the course of the operation, with the subsequent commitment to combat of one of the second echelon divisions. The correctness of such a variant of the operations was confirmed by the course of the operation.

The Commander of the 6th Army, Lieutenant-General V.D. Ukhov, paid little attention to the questions of coordination and of the operational supply of troops during the operation. His instructions were of a nonspecific nature and did not ensure the coordination of troop operations with the nuclear strikes which were being delivered.

While the divisions of the second echelon of the army were 250 to 380 km distant, General Ukhov did not trouble to set up a reserve, which he could have needed while the first echelon was performing its tasks. Moreover, he did not take the appropriate measures to bring up the divisions of the second echelon quickly.

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During this exercise, the 1st Army had its rear services fully deployed, and I will therefore go into the decisions of Commander of the Army Lieutenant-General P.S. Vashurin in greater detail.

In the decision which he made, the idea of using nuclear weapons was not clearly expressed and specific tasks were not assigned to the missile troops. The commander and staff avoided the decision of this important question and entrusted it to the chief of missile troops and artillery, Major-General of Artillery I.S. Mitskevich, who determined the targets for nuclear strikes in an incompetent manner and who, up to the start of the operation, was unable to give them proper evaluation. As a result, most of the nuclear strikes were planned against empty areas.

While the offensive zone of the army was more than 120 km wide, the commander of the army concentrated all the divisions and missile means on the left flank, in a 70 km zone, which led to overconcentration in the operational formation of the troops. In this case, this was not dictated by necessity. It was possible to dispose the troops in a departure area over a wider zone, foreseeing the subsequent move of large units in the most favorable directions for the offensive.

The 7th Tank Division, which made up the basic strike grouping of the army, was located 70 km from the national border at the time appointed for troop readiness, which did not give it an opportunity to make effective use of the results of the first nuclear/missile strike.

The commander and the staff did not concern themselves with the questions of antiaircraft defense at all, having handed them over to the chief of the PVO troops, Major-General I.F. Vilkhovyy, who proved to be unprepared to perform these tasks. Instead of organizing dependable zonal cover for the troops of the army, he in fact dispersed all the effective PVO means to cover individual objectives throughout the entire zone of the army.

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An especially large number of shortcomings were tolerated in the organization of the rear services of the 1st Army (Diagram 4). The army commander did not even consider it necessary to allot tasks for the impending operation to the chief of the rear services, having farmed out all the questions of rear services organization to him for solution.

The staff of the army rear services carried out the planning of materiel-technical support by basing them on the preliminary decisions of the commander, which were changed three times. By the start of the operation this planning was not completed. The deputy commander for rear services, Major-General Ye. A. Yaskevich, did not show determination in the study of the operational situation or of the missions before the army. As a result, his report had an abstract quality and threw light only on questions connected with the support of troops with rations and fuel.

The most important element of the organization of the work of the army rear services - the support of army missile large units and units with ready missiles - disappeared. Reconnaissance of the routes for missile delivery from the army missile-transport division to the missile brigade and to the missile battalions of divisions was not carried out. Thus, it was no accident that there was no bridge over the Gluch River, on one of the routes chosen for the transport of missiles.

Planning the movement of the rear services units and installations is the most important facet of the organization of army rear services. In the army this planning was carried out in such a manner that the mobile army base completed its move to the new area only at the end of 20 July and was in fact unable to support the troops for a 24-hour period both during the preparation and the start of combat operations.

The army staff did not coordinate the work of the rear services with that of the chiefs of arms of troops and services, and the deputy of the rear services was unable to organize cooperation between the services of

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the rear, as a result of which many problems of rear services support were found to be unsolved.

The maneuver of materiel means was not foreseen in the event of an enemy nuclear strike against the rear services targets. Measures to ensure the viability and stability of the rear services were not worked out.

In ending the analysis of the decisions and actions studied in the initial situation, I must dwell upon several general shortcomings in the planning and use of nuclear weapons in the initial strike.

As we know, the questions of the use of nuclear/missile weapons have already been worked out at the command-staff exercise "DON", from the experience of which the functions of various command echelons in planning the use of nuclear/missile weapons were determined. These postulates, as shown by the practice of the operational preparation of troops, are correct. During the preparation of the operation in this exercise everything occurred the other way round.

The staff of the front and of the armies kept aloof from the planning of the use of nuclear weapons, having entrusted this to chiefs of missile troops and artillery and to the commander of the air army. Affairs reached the stage where the targets for nuclear strikes which should have been destroyed by army means were determined not by the army commander but by the chief of missile troops and artillery of the front and were transmitted to the army by its staff directly to the staff of the missile troops and artillery of the army.

This, for example, is the way it happened in the 1st Army. The commander and staff of the army received these targets on trust, did not check them and accepted the assigned tasks for fulfilment.

The chief of staff of the front, Lieutenant-General N.K. Volodin, did not transmit to the armies a single order or a single piece of information concerning the delivery of nuclear strikes. Documents prove this. From this one can conclude that the orders to deliver nuclear strikes were not transmitted to the troops by the staff of the front.

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Thus, the army commanders frequently did not know when or against which targets nuclear strikes were delivered by the means of the front, and sometimes did not even know about nuclear strikes carried out by the army brigades and battalions of the motorized rifle (tank) divisions.

This is the only apparent explanation for the fact that, during the first nuclear strike of the front, it was planned to use 24 R-30 missiles with nuclear charges to destroy the "Honest John" installations, and the so-called stockpiles of the enemy's nuclear weapons, which according to the deep conviction of the chief of missile troops and artillery of the 1st Army, Major-General of Artillery I.S. Mitskevich, should be located 40 to 50 km from the national border. It is not hard to be convinced of the naivete of this approach to the selection and determination of targets. Of course the enemy will not locate stockpiles of nuclear weapons at such a distance.

For this reason, it was no accident that some nuclear strikes fell upon empty spaces or on targets without operational significance.

I did not find a single document about the planning of nuclear/missile strikes or their connection with troop operations, which should have been signed by the chief of staff of the front, and this was not accidental. An incorrect tendency is appearing among the generals and officers of the missile troops and artillery - "We command and we deliver the strikes". In order to eliminate such a tendency, the Minister of Defense, Marshal of the Soviet Union Comrade R.Ya. Malinovskiy, demands that all questions of principle connected with the use of nuclear weapons are decided personally by the commander of the front (army) and are not entrusted to other persons. They must determine the missions for the use of nuclear weapons in a concrete manner, indicating the targets, the coordinates, the yield of the nuclear charge, the type of burst and the order of delivery of the nuclear strike.

No one will be better able to allocate tasks to the missile large units and units, and to direct the efforts of the troops for the attainment of the goals of the battle and of the operation, than the commanders of fronts and armies and the divisional commanders.

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The commander of the air army and the chief of missile troops and artillery, to whom the nuclear weapons are directly subordinated, are only required to perform the tasks allocated by the Commander of the front and army accurately and in good time.

The nuclear weapon is a very expensive and formidable weapon and its use should therefore not be regarded lightly and irresponsibly. Any attempt to provide substitutes for the commanders (commanding officers) or for the organizing function of the combined-arms staffs in questions of the use of nuclear/missile weapons must be decisively suppressed.

I am quite convinced that Colonel-General of the Tank Troops Comrade A.L. Getman correctly understands all these questions, particularly the demands of the Minister of Defense concerning the personal decision by the commander of all questions of principle concerning the use of nuclear weapons. However, during the exercise, in practice, he still entrusted the solution of these problems to other persons.

* * *

The chief of the directing staff has reported to you that the combat operations of both sides began at 0200 hours on the night of 20 July at almost the same time as both sides exchanged mutual massed nuclear strikes.

On the whole, during this difficult period, the commander of the front troops and his staff correctly organized the control of the troops and they took measures to carry out the first planned nuclear/missile strike in good time.

As a result of the "Western" strike carried out with 43 nuclear warheads in the zone of the 2nd Front, a very complex radiation situation was created, especially in the disposition areas of the second echelons of the armies, of the rear services units and installations of the front

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and also along the lines of communications (Diagram 7). However, the commander and the chief of staff of the front did not evaluate the situation thoroughly and carried out measures to eliminate the results of this strike very slowly and impractically, which naturally had a negative effect on subsequent troop operations and on the work of the rear services of the front.

At the same time, the commander and the staff of the front clearly overestimated the results of their strike against the enemy with 27 nuclear warheads. This seems to be the only way to explain that only 8 missiles in all were used by the front in the zone of the offensive after the first strike right up until the middle of the day. Moreover, not a single strike with aerial nuclear bombs was delivered against the advancing "Western" troops, although the front had the capability. All this led to prolonged battles in the immediate border zone between the front troops and moderately strong groupings of the enemy, and to the slowing down of the tempo of the offensive.

Only after appropriate directions from the directing staff did the commander of the 2nd front make the decision to deliver a second nuclear strike, at 1730 hours, with 15 nuclear warheads (11 out of the 15, aerial bombs), against the enemy troops with the aim of developing the offensive and of fulfilling the assigned mission. This solution was correct and ensured the destruction of the advancing enemy reserves and the development of the operation. However this should and could have been done considerably earlier instead of basking in the results of the first strike.

The Commander of the 1st Army did not control the troops firmly at the beginning of combat operations. He did not make use of the existing breaks and gaps in the operational formation of the enemy for a swift development of the offensive in depth (Diagram 5).

With three enemy divisions, one of them an armored tank division, in front of the army, he found no targets for missile weapons.

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The commander of the front made the decision to deliver the repeat nuclear strike at 1730 hours but Comrade Vashurin for some reason changed the time and planned to deliver the strike at 1900 hours. To my question - Why was this done in this way? - he replied - I can find no targets for nuclear weapons. This at a time when the troops had only advanced some 12 to 15 km in 26 hours and when some of the enemy's divisions had themselves gone over to counterattacks.

Great lack of coordination was observed in the workings of the field control of the army, especially between the staff of the missile troops and artillery and the staff of the army. There was a lack of precision in the control of the army missile brigade fire. The army commander entrusted this important question to the chief of missile troops and artillery.

The Commander of the 4th Tank Army did not make use of the opportunities for massed use of nuclear/missile weapons with the aim of increasing the rates of advance of the large units of the first echelon of the army, which had slowed down. He took no measures to ensure a decisive change in the course of combat operations to his advantage by timely commitment of the large units of the second echelon of the army to combat, even under the clear threat of a counterstrike by the 5th Army Corps of the enemy.

The staff of the tank army did not display coordinated work and organization in ensuring firm control of the troops.

The Commander of the 6th Army reacted correctly and quickly, on the whole, to the situation created by the massed "Western" nuclear strike against the troops and rear area targets of the army.

At the same time, he did not avoid serious faults in the control of troops during the course of combat operations. The army commander did not take operational measures to move up to the line of the front the three second echelon divisions, located more than 250 km away, and this was at

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a time when he did not have on hand the forces necessary for the elimination of the enemy breakthrough on the left flank of the army, or for the destruction of the airborne landing, of up to a regiment in strength, which had been made here. He had to take several regiments quickly away from the front and send them to carry out these tasks.

The situation in the rear services of the army was greatly complicated by the fact that the enemy delivered a nuclear strike against the army mobile base. Despite this, during the course of combat operations, the commander paid little attention to the liquidation of the consequences of this strike or to the organization of materiel and technical support of the troops. For a day he did not even define the tasks, which needed to be performed in a highly operational manner, to his deputy for rear services.

In the solution of all these questions the field command of the army gave insufficient help to the commander.

The Commander of the 3rd Army Corps made the correct decision on the use of the missile battalion of the second echelon division, carrying out a march to support the combat operations of the 59th Motorized Rifle Division, which was in combat. In this case it was justified.

The rear services of the front, with the initiation of combat operations, had to perform simultaneously such tasks as the support of troops, carrying on active combat operations on a wide front, taking measures to eliminate the aftereffects of the enemy's nuclear attack on the troops and rear services objectives, and continuing with the formation and deployment of the basic groupings of rear service units.

The directorate of the front's rear services had great difficulty in handling these tasks.

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Due organization and operational efficiency were lacking in the work of the staff and services of the rear. Situation data was collected and collated very slowly, and orders for the rear services were given with great delay. For example, tasks concerned with the elimination of the aftereffects of the enemy's nuclear attack were allotted to rear service units only 8 to 10 hours after the delivery of the strikes. The working out of concrete measures for the restoration of communications routes, for the rendering of medical aid and for the organization of transport, took a full 24 hours.

Delay in making decisions about the rear services of the front also had negative effects on the work of the rear services of armies. Thus the rear service of the 1st Army, instead of busying itself with the support of the troops who had suffered great losses, was forced to move to the areas that it had to occupy by the end of 19 July. The separation of the mobile army base from the advancing troops was more than 100 km. A similar situation was also observed in the other armies.

Another serious fault in the work of the staff and services of the front and army rear services was that radiation situation data in rear areas was not transmitted to the rear services units.

The large losses of stocks of materiel supplies and of rear services units, on which General of the Army Comrade M.M. Popov reported, can be explained only as an underestimation by the commanders of the correct echeloning of stocks, and also of their dispersion and of the weak protection of the rear services targets by the means of the PVO.

The crossing of the Dnepr represented an especially important and difficult task for the troops, rear services units and transport, arriving from the depth of the country. The staff of the front did not attach due significance to this task, and the chief of engineer troops of the front, Major-General of Engineer Troops L.S. Bukhtin, who had sufficient capabilities, kept aloof from its solution.

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The poor coordination between the front and army in the questions of road preparation and of the organization of the road traffic control service must be considered as a big fault in the work of the highway maintenance and construction service (avtodorozhnaya sluzhba). The lines at which army roads were to be turned over to the front were not designated. The order of using available forces was not determined accurately.

The clear-cut organization of a workable dispatcher's service on the motor vehicle roads was favorable in the work of the rear services. Reports to the staff brigades and motor vehicle road directorate of the front on the passing of transport echelons arrived in good time. In this respect, the experience gained through the work of the 21st Road Traffic Control Brigade deserves to be included in the practice of troop preparation for combat.

The poor use of the available medical aircraft for the evacuation of casualties from centers of mass destruction must be considered to be among the faults of the work of the front medical service. The movement and the order for using the independent medical detachments and medical battalions were not thought out. Thus, for the 1st Army the independent reserve medical detachments were positioned at a distance of 50 to 80 km from the troops, which made it difficult for them to move to the zones of the divisions in good time and to deploy for work.

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The decisions of the troop commander of the 2nd Front, of the commanders of the armies and of the commanding officer of the 3rd Army Corps during the second day, on the use of nuclear and chemical weapons and on the development of the offensive were basically in conformity with the situation which had taken shape.

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The commander of the 1st Army, Lieutenant-General P.S. Vashurin, having made the decision to commit a second echelon division (28th Motorized Rifle Division) to combat, did not give clear-cut orders to the troops to ensure its commitment to combat. The chief of staff of the army, Major-General V.K. Dyatlenko, did not exercise control over the execution of the commander's decision. As a result, the 28th Motorized Rifle Division was, therefore, not committed to combat during 21 July.

The decision of the 6th Army commander, Lieutenant-General V.D. Ukhov, to commit the 5th Motorized Rifle Division to combat, in order to repel the enemy counterblow and to increase the efforts of the army, conformed to the situation which had taken shape. The time to move up the army antitank reserve and the Motorized rifle regiment of the 37th Motorized Rifle Division, to cover the gap between the 9th Tank and the 40th Motorized Rifle Divisions, was calculated unrealistically, which created the threat of the enemy's gaining the rear area of the 9th Tank Division.

The army commanders and their staffs did not analyze the situation and targets for nuclear strikes deeply, so that strikes with nuclear warheads were often delivered against an empty area or against secondary targets.

The work of the rear services, during the second day of combat operations, proceeded in a more organized manner. Forward front bases were deployed in the advanced sectors of the railroads and sections of the front's hospital bases moved up closer to the troops. This permitted a decrease in the distance (plecho) of transport by motor vehicle to 150 km.

In addition, the weak direction of the work of the army apparatus, and its inadequate control, on the part of the front rear services, led to a considerable separation of the mobile army bases from the troops.

The rapid rates of advance and the abrupt changes in the situation demand that the army rear services be constantly ready to support the troops with supplies of


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materiel. With this aim, the rear services of a modern army are made completely mobile. However, these peculiarities of the work of the army rear services are often not taken into consideration. From this arises the need to work out in detail the work methods of the army mobile rear services at speeds of advance of 80 to 100 kms a day and to train the rear services organs to meet this situation.

On 21 July we forced the front troop commander, by means of going to the TPU, to participate directly in the organization and work of the rear services. This was of some benefit, but it was clear that the front commander and his staff were not prepared for the timely and correct organization of the work of the rear services.

The business of organizing coordination between the various services, not subordinate to the chief of the rear services of the front (army) went particularly badly. It is on just this that the success and effective use of all available forces and means for the comprehensive support of troops depend.

The greatest number of discrepancies was in the organization of the rear services support of missile units and large units. The command and the combined-arms staffs must put this important question under constant supervision and ensure the organization of the coordinated work of all interested services.

* * *

In examining the decision of the commander of the troops of the front on the situation on 22 July, which led to a continuation of the offensive by all armies in the general direction of Brody, Tomashuv and Zamostye, with the aim of routing the opposing enemy and his approaching reserves, it is impossible to overlook the fact that, the commander, who knew of the concentration of "Western" groupings in the area of Berestechko and

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Pomoryany which were intended for a counterblow against the flanks of the 4th Tank Army, did not take measures to rout them and did not appreciate the danger which this counterblow could represent to the fulfilment of their task by the troops of the front during 22 July. The enemy had the opportunity of delivering a strike and of successfully moving forward to the communications lines of the 4th Tank Army and to the siting areas of the basic grouping of the army and front missile troops.

Despite this danger the commander and the staff of the front did not take aim with the nuclear/missile means of the front and of the air army in time to rout the enemy groupings which were preparing for a counterstrike. The readiness of the missile troops of the front to deliver a strike with seven nuclear warheads against the infantry and ~~armored~~ divisions, concentrated in the area of Berestechko, was tardily determined.

The tasks of the 1st and 6th Armies in the routing of the enemy counterstrike groupings were not assigned. The army commanders made the decision for the rout of these groupings on their own initiative; the commander of the front limited himself solely to the approval of these decisions. Hence, a coordinated powerful strike by the means of the front and army, aimed at breaking up the enemy strike, did not materialize.

The commander of the front assumed responsibility for the coverage of the flanks of the 4th Tank Army but he did not carry it out in good time. As a result, the army commander was compelled to move half the forces of a second echelon division to cover the army's flanks, thus losing the opportunity of making full use of them to strengthen his efforts.

The delay in the delivery of nuclear strikes and of troop operations against the counterstrike grouping resulted in the enemy's success in crowding our troops together and in drawing a significant portion of the 1st and 6th Army forces into prolonged battles and, to a certain degree, in restricting the freedom of operation of the tank army. As a result of this, the rate of advance of the basic grouping of the front decreased.

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During 22 July, the rear services of the front and of the armies operated more effectively and smoothly. The staffs and services of the rear area determined the tasks of the rear service units and installations correctly, on the whole, and made timely changes in the organization of the rear area in accordance with the situation which had taken shape. The use of air transport to provide materiel and the evacuation of wounded and casualties improved considerably.

It is only necessary to indicate a certain sluggishness on the part of the deputy commander of the front for rear services, Lieutenant-General Moroz, in providing assistance to the 6th Army, whose rear area sustained considerable losses.

The army rear services, with the exception of the 6th Army, were brought close to the troops. Such proximity was particularly important for the 4th Tank Army, since it gave the mobile army base the chance of supporting the troops even if the enemy should succeed in cutting the communications of the army.

The decision of the front commander on the final situation (at the end of 22 July, Sketch 8) was admissible in its general outline but it did not embody a determined effort to mass nuclear weapons in the directions of the basic efforts of the front, which would have ensured the rapid destruction of the opposing enemy and the movement of the main forces of the front toward the Visla.

The Minister of Defense, Marshal of the Soviet Union Comrade R. Ya. Malinovskiy, has already drawn our attention to the fact that in the making of decisions on the delivery of nuclear strikes, some commanders speak of the massing of nuclear weapons while, in practice, they prolong the timing of these strikes, delivering them in an uncoordinated fashion, with a small number of nuclear warheads and dispersing them over many objectives.

In the exercise, the 2nd Front was allocated 226 nuclear warheads for the operation. If the commander had taken one half of these or, for example, about 100 warheads, and had delivered them in the first day of the operation,

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using a large proportion in the first mass strike against, let us say, ten divisions and other important "Western" targets, then you will understand that in reality almost nothing of these enemy divisions would have remained. The breach needed by the front for an advance westward at high speeds would be ensured.

However, this did not happen. A portion of the nuclear weapons was employed at the beginning of the first day of the operation, toward evening another small strike was delivered, and from the morning of the second day several nuclear units of ammunition were again used, and in this way they continued to prolong the delivery of nuclear strikes further. This shows that we must study realistically, that we must plan practically, and that we must carry out nuclear strikes capable of inflicting decisive destruction on the enemy, of annihilating several divisions in his operational formation immediately and of ensuring fire superiority.

In their performance of the basic task of the operation, the 4th Tank Army and the 5th Tank Army, which had been newly committed to action, were not reinforced by river crossing means for the forcing of the Visla River.

Aircraft were given deep missions, instead of having their strikes directed first of all at the suppression of the enemy who was offering resistance to the troops of the 4th Tank Army and of the 1st Army in order to ensure the most rapid possible movement by the latter to the Visla.

With this, I end the critique of the operations and decisions taught in the course of combat operations and turn to an exposition of some conclusions on separate questions

* * *

The rear area. Today, the operational rear area presents an organism which is very complex in composition and versatile in performance. Under modern conditions, the role of the rear area has considerably increased. The correct organization of the rear support of troops is therefore one of the most important conditions for the successful conduct of a battle and of an operation.

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In examining the questions of the combat readiness of the rear area and the creation of groupings of rear service units and installations, one should note the lack of complete understanding revealed by many of the participants in the exercise of the special features governing rear troop support in the first operations of the initial period of a war. For some reason, many staffs and organs of the rear consider it necessary to spend time in calculating which forces and rear units are missing from the fixed establishment. Is this the basic task? Of course not. All calculations on bringing up to strength (otmobilizovaniye) and on activation plans are worked out in peacetime with a searching analysis of the capabilities of the national economy. The periods of arrival (srok pribytiya) of rear units and installations are determined in accordance with this. It is by this that we should be guided.

As regards the arrival at the front of rear area units and installations, the missing forces and weapons of the rear of the armies which are conducting swift offensive operations must be replenished first of all, and forward mobile groupings of rear area units must be created at the front to support the missile troops and the formations carrying out the main task of the operation.

But, in order that these problems may be correctly resolved by combined-arms staffs and rear area organs, it is necessary to consider carefully all the available supporting forces and weapons of the rear and to undertake immediate measures for their most effective employment. In the light of what has been said, it seems incomprehensible that during 17 and 18 July the completely organized front motor transport battalions stood idle because they had no task, while many army and front rear units, not knowing what to do, spent days attempting to obtain specific instructions from their superiors.

In the light of the decision of the task of the initial period of a war, it is wholly advisable that organic transport and, specifically, that of divisions and brigades, should support itself, with regard not only to unit reserves (vozinyy zapas) but also to all that is necessary for 24 hours of combat.

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It is advisable to draw the mobile army rear and the front supplies closer to the front in good time. This permits the squeezing of the rear area "accordion" for future extension during an offensive. Comrade Moroz did not make any such decision and the front command did not give any instructions on this matter.

The major defects, which occurred in the work of the combined-arms staffs during the exercise which has been conducted are explained primarily by the fact that staff personnel are weak in their knowledge of the organization of the rear and of the principles of rear troop support in modern operations. Consequently, the requirements of Ministry of Defense Directive No. 0061 were not completely fulfilled.

Combined-arms staffs cannot be indifferent to operations concerning the organization of control of the rear or the organization of mutually coordinated work by the rear organs of the front and armies.

During the exercise the working out of directives and orders regarding the rear was held up for 15 to 20 hours. The rear area control organs, not receiving timely operational orientation from the staffs, spent much time on unproductive mathematical calculations of different variations of rear support. The documents worked out were cumbersome and it was often difficult to grasp their basic idea or task; errors and inaccuracies in the calculations were not infrequently allowed.

Some comrades are inclined to make allowances for the fact that the control organs of the rear services of the front and of the armies were only 60 percent mobilized according to wartime TOE. Furthermore, the army control organs of the rear were supplemented with 30 percent of officers who had not previously worked in these capacities, and the time for their training and incorporation (skolachivaniye) before the exercise was completely insufficient. But this cannot serve as an excuse, since in every military district and in every army there are appropriate plans for the supplementing of rear organs being formed for wartime with both cadre officers and reserves. Such plans were evidently forgotten during the preparations of this exercise.

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Generals and officers intended for the appropriate functions should be brought in on all such exercises. In this way we will achieve an increase in the level of their own personal training and a knitting-together of the control organs, which is most necessary for the smooth functioning of work in the operations of the initial period of a war.

The new structure of the unified organs of military communications and of the road service was worked out for the first time in the exercise which has been conducted. As the experience of the exercise showed, the creation of a unified organ of military communications can help to improve the complex solution of the questions of planning the nets of communication routes, of repairing them and, especially important, of achieving unity of movement control and all types of communication. However, for a final confirmation of the advisability of creating these organs, a large-scale research job is needed, since the conclusions of one exercise are not in themselves enough.

It is very important to organize, in good time, reliable technical coverage (tekhnicheskoye prikrytiye) and the rapid liquidation of the consequences of nuclear strikes on communication routes; this increases the viability and stability of communications work to a considerable degree. The experience of the exercises which have been conducted confirm the advisability of timely construction of detours around the most important transport junctions, of alternate (dublirovushchiy) bridges and of prepared approaches for the subsequent laying of floating bridges or for the construction of low and underwater bridges.

The task of increasing the rates of reconstruction of railroads and motor roads is especially urgent; it must be resolved mainly by equipping the troops with new, highly efficient and maneuverable equipment and by creating the necessary reserves of floating bridges and prefabricated structures for the assembly of provisional installations.

An operation in the initial period of a war is characterized by the great volume of military transport activity. Thus, for example, during our exercise the 2nd Front's routes of communication had to provide for

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the receipt and passage of 425 operational echelons and had to transport more than 176 thousand tons of various materiel.

The carrying out of this transportation was complicated to a considerable degree by the existence in the territory of the front of so large a water barrier as the Dnepr, which split the communications into two sections, and by the absence of deep bypasses around the rail junctions of Bakhmach and Grebenka.

As a result of nuclear strikes by the enemy, the bringing up of supplies from the rear of the country through the regulating stations ceased. The carrying capacity of the front's routes of communication decreased from 142 pairs of trains (\$ 142 par poyezdov) in 24 hours to 52. In the process, communications over the Dnepr were interrupted for 2 to 3 days. The efficiency of motor transport decreased by 20-25 percent.

An important deficiency in the organization of military transport activities during the exercise was that they were carried out without sufficient regard for the radiation and chemical situation on the routes of communication. No measures were undertaken to negotiate the contaminated zones on the transport routes.

In some cases, questions of the reconstruction of destroyed installations were resolved without a sufficient appraisal of the consequences of nuclear strikes.

In questions of the combined use of the various types of transport, serious shortcomings were tolerated during the course of the exercise. During 17 to 19 July, there was almost no transport of materiel by rail or road. Water transport was not used for military transshipment in the preparatory period of the operation. The motor transport battalions attached to the rear area received no transport tasks during the first two days of the preparatory period.

There was no unified plan embracing all types of transport. This is a very great deficiency in the work of the front's rear staff, especially of the new organ of military communications.

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Now, when a new organization has been created, uniting in its composition all types of communication, one would have expected an examination of the question of creating a road traffic-control area to indicate all types of communication routes under a unified control and dispatcher services for rail as well as for water and motor vehicle communications.

The proper organization of the supply of missile and other fuels has special significance for the success of operations conducted by modern motorized rifle and tank troops. The experience of the exercise which has been conducted provides the basis for some comments on these questions.

First of all, it should be noted that the two front depots of special fuel (spetstoplivo) which were available did not fully satisfy the requirements of operational efficiency in supplying the missile troops and in synchronizing the work of all the forces and equipment of technical missile support. The fact is that, in the situation which was taking shape, the mobile technical repair bases of the ballistic missiles and of the independent technical battalions of antiaircraft guided missiles were dispersed at more than ten points along the entire rear service area of the front. It does not appear possible to organize the creation of reserves and the storage of missile fuel, ensuring their dispersal, while taking into account such a quantity of consumers. Therefore, the question of further perfection of the system and of the organs for supplying missile fuels arises.

The training of a specially formed front pipelaying brigade was conducted in the background of our operational rear area exercise.

During the preparation of the operation, and during its course, a 100 mm field main pipeline (magistralnyy truboprovod) 600 kilometers in length was laid and put into operation by this brigade. Eight hundred tons

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of diesel fuel were actually fed through this main line every day. The average rate attained in laying the pipeline and putting it into operation was 72 kilometers. The experience obtained from the laying and operating of a field main pipeline permits one to conclude that transport by pipeline is a reliable means of delivering fuel at great distances and ensures the uninterrupted supply of fuel to the troops.

The medical support of the troops during the exercise was carried out in accordance with a new organization under which all work concerned with the treatment of the wounded was concentrated at the front's medical installations. This made it possible to free an army of an unwieldy hospital base incorporating 50 to 60 hospitals and to relieve the army rear area considerably.

Some comments on the control of the operational rear area. In organizing the control of the rear area, it must be kept in mind that a large quantity of the most diverse special large units, units, and installations are now used for the support of the troops and that certain rear area groupings must be created from these, in accordance with the plan of the operation being conducted.

The indisputability of this truth is acknowledged by all, but in practice everyone is not always guided by it. This is just what occurred during the exercise which has been conducted. In spite of the fact that an operational rear area exercise was being conducted, the front and army troop commanders nevertheless did not pay proper attention to the direction of the rear area. This was especially evident during the planning of the operation. Can one not assign tasks to the rear services for several days under modern conditions or, worse still, not even inform one's own rear organs of the beginning of combat operations, like the commander of the 1st Army?

During the whole course of the exercise, the combined arms staffs at all levels were unable to organize close coordination between the rear area support services or

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to organize mutual and timely information about the situation with the rear service staff.

The rear area support services often operated without intercommunication, lacking the necessary data about the operational situation and wasting forces and weapons pointlessly. Specifically, the combined-arms staffs cannot be pardoned for having forgotten about the questions of close coordination between the operations of the rear service staffs and the organs of the missile artillery.

Speaking of the combined-arms staffs, I do not in the least underestimate the faults of the control organs of the rear service themselves for those omissions which we witnessed during the exercise. It is high time that all the organs of control of the rear services understood that you cannot control the rear services with old methods and that the operational factor is now acquiring great significance in their work.

We have particular grievances against the rear staff of the front (chief of staff, Colonel V.I. Yuryev). The officers of this staff are not trained to evaluate quickly and efficiently the operational and rear service situation which is taking shape, and do not know how to make a brief formulation of the basic idea of the organization of the rear area or how to anticipate the possible future development of the situation of the rear area. The staff of the front's rear worked without foresight, organized the coordination of the rear services badly and, in fact, did not assume control of the operational rear area.

All work directly concerned with control of the operational rear area and with the solution of general questions of the organization of the rear area must be entrusted to the deputy commander of the rear area. I emphasize this because, during the exercise, few of the deputy commanders understood their responsibilities and rights properly and took on the decision of general questions regarding the organization of the operational rear very timidly.

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First of all, it should be noted that many still do not understand properly how to determine the composition of rear area control points. The combined location at the TPU of all the rear support services, irrespective of their organic subordination, is called for by the necessity for their continued and close coordination.

During the exercise, for some reason, the organs of missile and artillery armament, tank armament, and here and there even motor-tractor (avtotraktornaya) services were located at command points. This weighed down the command points and at the same time diverted these services from combined work in the general system of the organs of rear service support.

Much work must be done on the equipment of control points with technical means for the mechanization of the work of calculation and planning (schetnoplanovaya). As the exercise showed, because of the complete absence of these means, the officers of the rear control organs spend up to 75 percent of all their working time accounting and calculating, and are diverted from the solution of operational questions in their service as a whole. During the entire time, almost none of the generals and officers of the control organs visited the troops being supported, or even rear service units and installations which had actually been turned out for the exercise.

The support of missile troops with missiles, special charges (spetszaryad) and special fuel (spetsoplivo) (Sketch 6). The exercise indicated clearly that the timely support of missile units with missiles is one of the principal questions with whose solution the commander of a front and an army must primarily concern himself. It is already time that we learned thoroughly that the readiness of a front, of armies and of divisions for combat operations, especially in the initial period of a war, is determined primarily by the missile units, whose combat efficiency, in their turn, is entirely dependent on the missile technical units carrying out the assembly, preparation, and delivery of missiles for launching.

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In making a decision on an operation, it is necessary to determine accurately the tasks of missile technical support, indicating specifically when, how many, and which missiles it is necessary to prepare and to deliver to the missile brigades, regiments, and battalions. One must also make a careful approach to an evaluation of the capabilities of the units in the assembly of missiles and to a definition of the time needed for their preparation, to an evaluation of the deployment areas of the missile technical units, and of the depots of missile fuels, and also to the methods and measures for ensuring the reliable delivery of missiles to the missile large units and units.

Questions of the support of the troops with nuclear/missile weapons are, as is well known, the direct responsibility of the chief of the missile and artillery armament.

In accordance with this, he is required: to receive instructions from the chief of the missile troops and artillery and the chief of the PVO troops about the quantity and timing for the delivery of the missiles to the troops; to coordinate with the chief of the rear the disposition areas of the missile technical units, the unloading points for the missiles, the motor roads for their transport, the order for the use of helicopters for transport, and questions regarding the support of missile-technical units with missile fuels.

In accordance with the instructions of the commander of the front and the tasks of the missile units in the operation, the chiefs of missile troops and artillery and of the PVO troops must give timely instructions to the chief of the missile and artillery armament on the transport of missiles and special charges, and also on the timing for the preparation and delivery of missiles to each missile unit.

On the basis of these instructions, the chief of the missile and artillery armament works out plans for the support of troops with missiles with nuclear and chemical charges and with antiaircraft missiles.

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Unfortunately, the questions of supporting missile units with missiles were not resolved with such consistency at the front. Initially, the functions of planning and disposition, and the work of mobile technical repair bases were taken on by the artillery staff of the front, while the role of technical executant (ispolnitel) was assigned to the staff (apparat) of the chief of missile and artillery armament.

One cannot acknowledge as normal a situation in which the chief of the missile troops and artillery of the front takes over functions which are unusual for him, concerned with the immediate direction of the work of mobile technical repair bases, and including the technical units which prepare antiaircraft missiles, virtually eliminating the chief of missile artillery armament of the front from this work.

For 24 hours, the chief of the missile troops and front artillery and the chief of missile artillery armament were unable to give the troops even an orientation plan for the delivery of missiles.

Despite repeated inquiries from the armies about the plans for missile delivery, the front did not provide these plans to the troops until the very beginning of military operations. Just imagine: can armies plan combat operations if they do not know what nuclear weapons they will have at their disposal? Certainly not. For this reason, it is incomprehensible that the front was able to distribute conventional artillery between the armies and yet did not at the same time evolve a plan and the procedure for the delivery of nuclear and chemical missiles for the missile units subordinated to armies and fronts, that is, of those weapons which are assigned the decisive role in the destruction of the enemy in a future war. Not to provide the armies with missiles at the proper time means, essentially, to disrupt the operation and to lay oneself open to a strike. The front confused armies and units with contradictory information on the delivery of missiles for the operation.

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One should not be carried away by the composition of voluminous and complex plans for an extended period, as happened in the 2nd Front, where the plan for providing the troops with missiles was worked out for a week with instructions for the delivery of missiles to armies by days and according to yield. Such planning is not realistic. The delivery of missiles to the troops should be planned for the first 2 to 3 days and then, during the course of the operation, one should make operational plans for each day's delivery depending on the situation which has taken shape.

In the course of the exercise, we were forced into a whole series of cases in which these elementary requirements were not met.

Here are several examples of the way in which the delivery of missiles was actually carried out.

The 27th and 40th Independent Missile Battalions of the 6th Army began to move to new siting areas at 2100 hours on 19 July, while the missiles for these battalions were delivered by the 4th Mobile Technical Repair Base at 2200 hours at the former areas, where the battalions no longer were. In this same army during 18 July, the planning of the transport of missiles from the 4th Mobile Technical Repair Base was carried out from an area where the base was not, in fact, located, since the front had changed this area without informing the army.

In the 1st Army, on the orders of the chief of missile artillery armament of the army, an R-30 missile was dispatched to the 28th Independent Missile Battalion at 0130 hours on 20 July and was delivered to the rendezvous point at 0530 hours. However, the battalion was no longer located there. The missile stayed at the rendezvous point and was returned at 1400 hours. Thus, for fourteen hours, the missile was traveling along lateral roads, or standing at a rendezvous point without concealment, and still never reached the battalion. Many similar examples of such direction can be provided.

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The control procedure (poryadok kontrolya) in the front and armies is not worked out, and it was not carried out in the passage of each missile from the front to the unit. The directorate (upravleniye) of missile artillery armament of the front and of the armies did not handle these questions well in this exercise.

In a number of cases, plans for the delivery of prepared (gotovaya) missiles to the units were unrealistic since the condition of the routes, and their length, and the regrouping of units and their locations at the moment of arrival of the missiles, were not properly taken into account in their formulation. The directorate of missile artillery armament of the front lacked data as to when and on which route the detachments transporting prepared missiles were proceeding to the units, on their position or condition at a given moment, or on the time at which the missiles were handed over to the missile units. Without this data, one cannot speak of accurate preparation or of the timely infliction of nuclear strikes.

This once again confirms the need for reliable communication between the chief of missile artillery armament and the missile technical units, without which timely and accurate support of the troops with missiles is inconceivable.

There were also many shortcomings in the organization of the planning of movement by missile and missile-technical units during the course of the operation.

As experience of the exercise indicates, the movement of the missile and missile-technical units of a front can be correctly planned when the movement plan is coordinated between the operational control, the chief of the rear area, and the chief of the front's engineer troops.

The siting areas for the front's brigades and for the battalions of army missile brigades and the disposition areas of the mobile technical repair bases, the routes for the movement of these units, and the routes for the transport of missiles to missile units must be defined in the movement

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plan for the days of the operation. In all cases it is necessary to choose the best routes for the missile and missile-technical units.

The operational control of a front planning the regrouping and the forward movement of troops from the depth must ensure that the selected siting areas and disposition areas of missile-technical units and the routes for their movement are not occupied by other troops and organs of the rear area at the time for the movement of these units through them.

The movement plan of missile and missile-technical units must be coordinated with the chief of the front's engineer troops, in order that he can provide in his plan for comprehensive support of the movement of the missile and missile-technical units as regards the engineering aspect.

In accordance with the plan for the movement of the missile-technical units of a front to new areas, the chief of the rear area must plan and ensure the distribution of the front's depots of missile fuels and of their sections in such a way that the missile-technical units can organize the receipt of this fuel in good time. Furthermore, he must organize road support and regulation (dorozhnoye obespecheniye i regulirovaniye).

If changes are made in the movement plan in the course of an operation because of the situation, the chief of missile artillery armament, the chief of the rear area, and the chief of the front's engineer troops must be informed immediately.

The commander and staff of a front, in preparing an operation, must investigate these questions thoroughly in all cases and must supervise their fulfilment.

The defects which have come to light in questions of the organization of support for missile large units and units with missiles indicate that insufficient attention was given to this important question by the chiefs of missile troops, of the artillery and of the PVO troops.

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The single fact that, during the preparation for an operation in the initial period of a war, in spite of the availability at the mobile technical repair bases of a sufficient quantity of assembled missiles, the front did not deliver them to the missile units before their movement forward to the siting areas, in itself testifies to the lack of administrative ability of the front in so important a question.

The control of the mobile technical repair bases and of the transport (parkovyy) battalions at the beginning of the exercise was accomplished through the front's missile-technical base. As an examination has shown, such a control plan did not respond to demands for the rapid passing of orders to those who were to carry them out.

The control of the front's missile-technical base actually represented a transmission echelon of command which delayed the handing-on of these orders. It carried out none of the planning of the work of the mobile technical repair bases or of the transport battalion, since the tasks of each of these subunits were determined by the chief of the missile-artillery armament.

Thus, from the very beginning of the exercise, the control of the front's missile-technical base represented an intermediate element, and we were forced to liquidate it, transferring all its functions of controlling units to the chief of the front's missile-artillery armament. This simplified control and reduced the time for handing down tasks to those who were to perform them by more than half (Sketch 12).

The preparation of missiles for the missile battalions of motorized rifle and tank divisions was carried out by the mobile technical repair bases operating in the zones of the armies. These bases also carried out the preparation of missiles for the army and front brigades. As the exercise showed, the availability of a combined mobile technical repair base, operating in an army zone and supporting it with all types of missiles with nuclear and

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chemical charges, is advisable and justifies itself. Additional consideration should be given to the advisability of setting up means to assemble tactical missiles in the armies.

Questions of the transport of missile fuels to the disposition areas of mobile technical repair bases should be considered. Evidently we shall need 3 to 4 sections (otdeleniye) of missile fuel depots and we will have to use front battalions for the transport of special fuels - locating them at a short distance from the mobile technical repair bases.

Some words on missile-technical support for the antiaircraft guided missile units.

The deficiencies which I have indicated apply also to the support of antiaircraft missile units. It should be noted that the requirement for antiaircraft missiles exceeds the front's requirement for the "surface-to-surface" class of missiles in quantity by 5 to 10 times. This results from the special features of the preparation of antiaircraft missiles. Productivity in the assembly of the missiles has a particularly great significance.

The actual work of missile-technical units in the preparation of missiles during the exercise indicates that their productivity can be increased by perfection of the technological production lines and of the equipment.

Characteristic in this respect is the example of the production line preparing an antiaircraft guided missile (zenitnaya upravlayemaya raketa - ZUR). Experience shows that by a slight increase in the number of assemblies and personnel, productivity can be increased three times.

It is necessary to work urgently on the question of increasing the productivity of missile-technical units. Here we have large reserves.

All these organizational questions must evidently be resolved in conjunction with measures for the perfection of the organizational and organic structure

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of all the organs controlling missile-technical units, of the methods of organizing communications with these units, and within them, and of means for the improvement of engineer support for the missile-technical units and for their escorts (okhrana).

The air army rear and the support of cruise missile units (Sketch 10). With the rearmament of the Air Forces with new aircraft and missile equipment, the principles of the use and the methods of combat operations have changed, and consequently, the organization for the basing of the large units and units of an air army has also changed.

You know, comrades, that after the air parade at Tushino during Aviation Day, the Americans began to clamor that we had surpassed them by many years in the development of aircraft. This clamor deserved attention, since they say quite correctly in the U.S.A. that the Soviet Union has displayed aviation equipment which they are themselves a long way from building.

Speaking of our aviation, Nikita Sergeyevich Khrushchev praised the pilots and the designers very warmly and wished them success in the future qualitative and quantitative development of our aviation.

At present, aircraft represent the basic means for the neutralization of mobile and small-sized targets, especially missile weapons. They must provide reliable cover for the troops and their uninterrupted support, and also carry out reconnaissance on behalf of the troops.

For this, it is necessary that the rear area of an air army should be capable of building and restoring a sufficient quantity of airfields to support extensive maneuver by aircraft and their rebasing in good time, given the modern rates of advance of the ground troops.

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The decisions of the army commander and of his deputy for the rear on questions of rear area organization and on the supply of materiel were basically correct and corresponded to the conditions of the situation which had been set up (Sketch 10).

An important deficiency is that, during the planning and organization of rear support for aviation and for the missile forces, the command, staff, and services of the rear of the air army did not make a sufficiently deep analysis of the rear area situation which had formed in the zone of the front and allowed some miscalculations.

The deputy commander of the air army rear, Major-General P.V. Putrushinin, who had left the main part of the supplies of ammunition on the left bank of the Dnepr before the beginning of the operation, was not able to make an immediate evaluation of the consequences to which this miscalculation could lead in the event of the destruction by the enemy of the rail river-crossings, when the air army would be practically without supplies of aviation ammunition. The dispersal of supplies before the beginning of the operation, with their distribution not in one direction, as was done, but in several, was also not provided for; this would have afforded great safeguards in preserving supplies of technical equipment against the effects of the enemy's nuclear/missile strikes.

The further perfection of the organization and equipment of aviation-technical units must be continued, proceeding from the main demand, which is for an increase in their mobility, so that they are able to rebase themselves on new airfields, in one trip, at the same time as their air regiments and to work there at once and without interruption.

During the exercise, special attention was given to the resolution of questions of supporting air army units with missile armament, with the actual deployment of an independent aviation engineer regiment and of an army depot of front cruise missiles.

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During the exercise, the delivery of four front cruise missiles to the army depot and to the technical position of the regiment was carried out.

Experience was gained in the organization of loading and unloading work and in the transport of missiles by rail, by air, and in vehicles.

The exercise permitted us to check on and to make more precise the organic organization of the army depots of front cruise missiles and their technical equipment. The organization of a depot must make provision for the possibility of dividing its basic subunits into two parts taking into account the deployment and the work of the depot in two positions throughout the operation.

Toward the end of the third day of combat activities, as a consequence of enemy action against the airfields and of the large expenditure of aviation fuel, the air army had almost completely exhausted its supplies, while the transport leg (plecho) had increased to 200 kilometers and more. In these conditions, apportioning the main pipelines to the delivery of aviation fuel to the sections of the army POL depots, which had moved forward on the ground, became a crucial question.

The antiaircraft defense of troops (Sketch 11).

During the exercise, the 2nd Front was opposed by an enemy who was sufficiently strong in the air, having a complement of nearly 1,000 combat aircraft of tactical aviation and 18 launching mounts for cruise missiles. Apart from these resources, strategic and carrier-borne aviation could participate in the first mass strike against the troops and the rear area of the front.

The front's antiaircraft defense had at its disposal twenty-three antiaircraft missile regiments and battalions, one battalion of special designation (SPETSNAZ), ten antiaircraft artillery battalions, and two fighter aircraft divisions. In addition, an antiaircraft missile brigade, two antiaircraft missile, and three fighter aircraft, regiments


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of the 7th Army of the PVO of the Country were operating in the front zone. These forces permitted the organization of a zonal PVO system for the basic areas in which the troops were disposed and for the front's rear area; however, this was not done by the Chief of the PVO Troops of the Front, Major-General V.A. Yermolov. This situation was only corrected at the demand of the directing staff, and by the beginning of the operation, cover for the front's rear area was provided by six antiaircraft missile regiments and battalions, by the front's fighter aviation, and by the 7th Army of the PVO of the Country. The antiaircraft defense of the rear areas was also strengthened by PVO means, covering the troops of the first operational echelon while the troops of the second echelon and the reserves were covered by organic means.

In planning the operation, it should, however, have been taken into account that when the troops turn to the offensive, the PVO means of the armies and of the division will go forward together with the troops and the antiaircraft defense of the front rear areas will weaken. In the antiaircraft defense plan, which, incidentally, was worked out late, reinforcement of the antiaircraft defense of the front's rear area during the transition to the offensive was not provided for.

As the exercise showed, the organization of the control of the combat operations of the PVO forces and weapons covering the disposition areas of rear area installations, presents particular difficulty. Toward the morning of 22 July, the majority of the antiaircraft missile units subordinated to the front were located at a distance of from 100 to 360 kilometers from the command point of the PVO of the front. The chief of the front's PVO troops cannot control combat operations of these units at such great distances. The necessity for more thorough study of this question arises from this.

During the exercise, the coordination between the PVO troops of the 2nd Front and the formation of PVO troops of the country showed itself in the fact that up to the beginning of the operation the 7th Army of the PVO of the Country conducted radar reconnaissance of the air

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enemy on behalf of the front and also partially covered the troops and the important installations in the front's rear areas.

The coordination between the front's PVO troops and the fighter aviation of the 78th Air Army during the exercise was carried out essentially by distributing their efforts through the zones of operations. Meanwhile, with its main forces, fighter aviation destroyed the air enemy in depth and on the flanks of the front's offensive zones and with part of its forces on duty in the air (iz polozheniya dezhurstva v vozduke)-those ahead of the front - up to the killing zones (zona porazheniya) of the antiaircraft missile units. However, three of the four zones of duty in the air were located within the limits of the killing radius (radius porazheniya) of the anti-aircraft missile units covering the first operational echelon.

In a combat situation such organization of coordination would have led to the destruction of our own fighters. Furthermore, it is not advisable because of the small capabilities offered by the limited fighter forces assigned to duty in these zones.

In organizing radar intelligence, the chief of the PVO troops of the front envisaged the establishment of a system of radar silence (rezhim molchaniya) of only seven radar posts, between 20 and 100 kilometers away from the national borders. In the event of enemy destruction of the radar posts of the PVO of the Country, this would not ensure the timely detection of air targets.

In order to check the smooth functioning of the combat teams of the PVO command points and in calculating the requirements for missiles, a competition (rozygrysh) of the air situation was conducted. Seventy-four targets, made up of nearly 250 aircraft, participated in the first strike by the air enemy. Only 21 targets, that is nearly 30 percent of this number of targets, were plotted (provodit) by the command point of the front's PVO, while the remainder went unnoticed. From 30 to 60 percent of the targets were plotted by the armies. The worst plotting of all was done in the 4th Tank Army and the 6th Army.

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The transfer of control by the PVO troops from the command point to the alternate command point was badly organized. In substance, there was no transfer and throughout the entire direction of the movement there was no control of the PVO troops by the K.P. There was no contact between the alternate K.P. of the PVO and the armies, the situations of the antiaircraft missile units and availability to them of missiles, and the positions of radar means and their situations were not known to the officers.

Engineer support of the operational rear and of the missile-technical units. In the course of the exercise, questions of engineer support and antiatomic protection, which are of particularly great significance for the viability of the operational rear and for the missile-technical units, were studied.

The exercise showed that commanders and staffs pay completely inadequate attention to engineer preparation (oborudovaniye) and to the camouflage of the disposition areas of missile-technical and rear service units and to the preparation and maintenance of routes for the supply of materiel and for troop maneuver.

In the course of the exercise, the disposition areas of missile-technical units were equipped slowly and incompletely. For example, during the preparation of the operation, the disposition area of the 5th Mobile Technical Repair Base actually took a day and a half to set up, while the disposition areas of the front's technical base for guided antiaircraft missiles which were actually in operation were completely unprepared in the engineering respect. Furthermore, its technical battalion was located virtually in the open, although large tracts of forest were available in its area.

The supply routes for nuclear charges and missiles from unloading stations and airfields and the delivery of prepared antiaircraft missiles from missile transport subunits to siting areas passed along poor field roads with bridges of small load capacity and through populated points. One could only be amazed that the worst roads were selected for the transport of missiles.

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Under all conditions, reliable protection for personnel and equipment against the effects of means of mass destruction must be achieved in the shortest possible period of time after the arrival of missile-technical units in rear areas. To increase the viability of missile-technical units in the course of development of an operation, it is necessary to select and prepare new disposition areas for them in accordance with the forward movement of the troops. This will ensure their rapid deployment and the creation of conditions for high productivity in the preparation (snaryazheniye) of missiles.

At present, missile-technical units do not have in their composition engineer forces or means sufficient for the rapid anti-atomic preparation of their disposition areas. The experience of the exercise indicated that it is advisable for missile-technical units (mobile technical repair bases, technical and transport battalions) to have their own engineer subunits equipped with a sufficient quantity of highly productive and maneuverable engineer vehicles (mashina).

Under modern conditions, one cannot count on the successful conduct of an operation unless measures for troop and operational camouflage are carried out.

The task consists of training the missile-technical and rear service units systematically and constantly in the ability to conceal their disposition areas carefully, using the properties of concealment offered by the terrain and making use of authorized camouflage equipment. Camouflage units, front (army) subunits, and the engineer depots must possess manufactured dummy missile equipment with which to set up false disposition areas of missile and missile-technical units both during the preparation of the operation and during its course.

The road support of an operation now acquires an important role.

Unfortunately, this question was not properly solved during our exercise. Neither the control of military communications of the front, nor the corresponding sections

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of armies nor the staffs of the engineer troops accorded proper significance to the organization of a new type of road support, and the combined-arms staffs isolated themselves from this weighty and important question.

It should also be noted that the allocation of reserves of river-crossing equipment and bridge construction for rapid restoration of river crossings in the event of their destruction was not provided for. The result was that, during the delivery of nuclear strikes by the enemy against the bridges, the crossing of the Dnepr by the troops and by the rear services of the front was interrupted.

On 21 July, with the aim of restoring river crossings, the commander of the troops of the 2nd Front decided to build four underwater bridges across the Dnepr. The work of constructing two bridges in the Bukrin and Kenev sector was given to the 35th Pontoon Bridge Brigade, which had approached the Dnepr from the depth of the country. It was laid down that the bridges should be ready at 1100 hours on 23 July. The pontoon bridge regiments of the 1st and 6th Armies, located 380 to 400 kilometers west of the Dnepr, were brought in for the construction of two other bridges (in the Chernin and Grebeni areas). The time at which the bridges were to be ready was fixed at 0500 hours on 24 July.

As a result, the front's resources for ensuring the impending forcing of the Visla were sharply decreased, since only the pontoon bridge regiments of the 4th Tank Army and the 5th Combined Arms Army could be used for the laying of floating bridges.

One must consider that this decision to use pontoon bridge units to restore the Dnepr crossings could have brought about the frustration of the front's allocated task of forcing the Visla swiftly.

The lack of a plan by the staff of the front for road support for the operation caused serious difficulties in the organization of support of the forward movement and in the commitment to battle of the 5th Army, which had been transferred to the 2nd Front.

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The protection of the front (army) rear against weapons of mass destruction. In conditions when nuclear weapons and other weapons of mass destruction are used, the protection of the operational rear, especially of missile-technical units, is the most important task of the commander and of the chief of the rear of a front and of an army.

In the delivery of the first mass strike in our exercise, 34 of the 43 nuclear warheads used by the "West" against the installations of the 2nd Front's operational rear area were used with a ground burst setting (ustanovka na nazemnyy vzryv) (Sketch 7). As a result of this strike, together with the destruction of the railroad bridges across the Dnepr, of stations, and of depots in the army and front rear area, three hours after the burst an extensive and almost continuous zone of radioactive contamination formed over a total area of 90 thousand square kilometers, with radiation levels from 0.5 up to 30 roentgens per hour, in which it was necessary for all personnel to wear gas masks for 10 to 20 hours. Over an area of 8600 square kilometers, where radiation levels were from 80 to 100 roentgens per hour, personnel had to stay in various types of cover, in dugout shelters and in slit trenches for up to 24 hours, until the levels of radiation dropped.

It was necessary to move personnel out of areas of contamination with radiation levels of more than 100 roentgens per hour, which totalled 1800 square kilometers, into other areas.

It should also be noted that the contamination of so large an area, as a result of ground nuclear bursts, limited the movement capabilities of the rear organs in the front's rear area.

The front's staff and the army staffs did not make a sufficiently deep analysis of the radiation situation which had built up and did not therefore undertake all the measures necessary to eliminate the consequences of nuclear strikes and of radioactive contamination, to prevent the re-irradiation of personnel and to restore the combat

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effectiveness of rear service units and installations. A calculation of the irradiation doses sustained by personnel of the rear service units and subunits was not organized by the rear staff of the front.

The experience of the exercise once again confirmed that in the interests of proper organization of the protection of the troops and of the organs of the rear area and in the interests of their timely information about the radiation situation, it is necessary to provide a constant reflection of the dynamics of the fall of radiation levels on charts in the staffs of the front and of the armies and in the rear area staffs.

In view of the difficulty of notifying the great number of rear service units of the radiation situation in good time, they must be provided with instruments for radiation reconnaissance.

The exercise also showed that the complex of subunits for chemical protection in the front's rear area, consisting of three independent companies, is insufficient to eliminate the consequences of a nuclear and chemical attack. Here one must bear in mind that missile-technical units have absolutely no means for special treatment (obrabotka). Clearly, it will be necessary to reexamine the front's complex of rear area chemical protection subunits with a view to increasing their capabilities so that they may support the missile-technical units with means for special treatment.

The transport of tanks on heavy-duty trailers. In the course of the exercise, tanks of the 39th Tank Regiment were actually transported on heavy-duty trailers from the Ovruch area to the Lutsk area and back, over a distance of more than 500 kilometers. The experiment was conducted with exploratory aims. The task of attaining high tactical speeds of transport was not imposed. It was envisaged that the operational, organizational, and technical capabilities of such a movement should be determined, with the aim of conserving the motor transportation potentials (motoresurs) of combat vehicles during a troop regrouping, which for some reason cannot be carried out by rail in those areas which are supported by road communications. The preliminary conclusions drawn from this experiment are as follows.

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The transport of tanks over distances of 500 and more kilometers provides an opportunity for considerable economies in the motor transportation potentials of combat vehicles. Here, the fact that a tank can be brought up to designated areas with a complete unit of fire and with a full load of fuel has great significance.

Additional equipment is not required on the tanks or on the prime movers to load and unload the tanks, as the exercise showed. A tank moves on to the trailer under its own power and is also unloaded independently, and it is made fast to the surface of a trailer with the trailer's equipment. Special loading and unloading surfaces are not required.

In organizing the march of heavy-duty prime movers carrying tanks, the routes should be carefully prepared, taking into consideration the weight of the tank carrier, which is 61 tons in all, and the large turn radius, which is 13 to 14 meters. The movement of the vehicle convoys (avtopoyezd) must be supported by movement support detachments. They must be allocated the additional tasks of reinforcing and widening bridges and of preparing turn-offs (syezd) from the roads for halts and for the unloading of tanks.

The march speeds of the vehicle convoys during this exercise were 30 to 40 kilometers per hour on an asphalt highway, 20 to 25 kilometers per hour on a hard (ukatannaya) earth road, and 8 to 12 kilometers per hour on protracted ascents with gradients of 10 to 12 degrees.

The low speeds of movement of the vehicle convoys during this exercise can be principally attributed to lack of experience in the organization of such transports, to weak engineer intelligence, to poor preparation of routes, and to the inadequacy of the forces of the movement support detachments. In principle, these speeds can be higher.

The experience of transporting tanks yielded positive results which should be used in the course of combat and operational training in order to prepare our tank large units and units.

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The chief of the tank troops and the chief of the Central Motor- Tractor Directorate should work out and present their proposals on this question to the Main Staff of the Ground Troops on the basis of the experience of the exercises conducted.

Party-political work during the exercise. The command of the district and of the armies, the political control, the political organs, and the party-political apparatus of the troops involved in the exercise devoted considerable work to preparing personnel for the exercise. All party-political work was conducted with the aim of supporting the basic questions being resolved in the course of the exercise. The political organs and the party political apparatus organized specific work in the commands, staffs, large units, and units directed towards ensuring the qualitative accomplishment of the tasks assigned. The party and komsomol organizations mobilized the personnel for the best fulfillment of their responsibilities.

It should be noted that an absolute majority of the personnel taking part in the exercise regarded the fulfillment of the obligations placed upon them conscientiously and with great exertion. No cases of improper behavior toward the local population or of other misdemeanors were noted among the district troops throughout the exercise.

As regards the work of the front's political control and of the political sections of the armies during the exercise, they still paid insufficient attention to the activities of the rear area and had only a weak influence on their operations. Apparently, they do not know the rear area sufficiently well themselves. During the exercise, moreover, serious defects in the organization of the work of motor transport units and subunits were not avoided; not all the drivers were included in educational training. It was no coincidence that cases of combat equipment lagging behind on marches and of accidents to vehicles involving personal injuries were recorded.

Individual cases of poor work by supply service officers in organizing the feeding of personnel also took place, and led to irregularities and to the tardy distribution

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of products to a number of subunits.

On the whole, party-political work was conducted purposefully during the exercise and helped the participants to perform their practical tasks.

* * *

Before ending my critique, I would like to note that the commander of the front, Colonel-General of Tank Troops Comrade A.L. Getman, and the district apparatus (okruzhnoy apparat) did much work on the preparation of the exercise and of the troops taking part in it.

During the exercise Colonel-General of the Tank Troops Comrade Getman displayed an adequate understanding of a modern offensive operation and of the role of nuclear/missile weapons and of other weapons of mass destruction, but the revelation of defects during the exercise make it incumbent upon him to occupy himself more seriously with the study and mastery of questions of the practical application and use of missile troops and also of the organization of rear service support of modern operations. He must train his officers, generals, and staffs thoroughly in the reliable control of the rear in support of any operation.

It is necessary for the chief of staff of the front, Lieutenant-General N.K. Volodin, to master the new scale of work more rapidly, to study the modern means of combat thoroughly, to examine the organization of the modern front and army rear areas more seriously, to give more help to the commander, and to provide the staff with a leading role in questions of the organization of control of troops and of their materiel and technical support.

The deputy commander of troops of the front's rear, Lieutenant-General V.I. Moroz, although he has been in this position for two years, has still not acquired the necessary experience in organizing and planning the work of the front's operational rear area and displayed indecision in his work and in his direction of subordinates. He did

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not give the requisite attention to the organization or to the thorough support of missile troops and missile-technical units.

On the whole, the district and army apparatus taking part in the exercise, in spite of the many errors which they committed, worked most strenuously and conscientiously, gained solid experience and skills in organizing the work of the rear area, recognized the complete and direct dependence of the success of an operation on the proper, timely, and uninterrupted materiel and technical support of the troops and by their work provided all of us with the opportunity for practical study of the tasks which were allotted before the exercise.

In conclusion, I would like to note the great and fruitful work carried out by the directing staff, headed by General of the Army Comrade M.M. Popov, and also by Colonel-General Comrade F.M. Malykhin, Colonel-General of Aviation F.P. Polynin, General of the Army Comrade P.A. Kurochkin, and by all the intermediary apparatus which ensured the instructive conduct of so complex an exercise.

Permit me, on our joint behalf, to thank the Commander of the Troops of the Carpathian Military District, Colonel-General of Tank Troops Comrade Andrey Lavrentyevich Getman, for his attentive regard and for the care he has shown to all of us as participants in the exercise and for the great work he has done in supporting the exercise as a whole.

* * *

Comrades:

The front unilateral, two stage, operational-rear exercise which has been conducted, has permitted us to give practical study to a number of important questions concerning the arrangement and work of the modern rear area of a front and of armies, especially to the missile-technical support of troop combat operations in the first operation of the initial period of a war.

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This exercise also permitted us to study, to a certain degree, questions of the control of a front and army rear.

In the course of the exercise, much valuable material on these questions has been amassed; this should be examined thoroughly and in the near future it should be turned into a fuller collation and implemented in a series of practical organizational measures.

Together with this, a whole series of grave deficiencies came to light during the exercise, showing that some responsible chiefs and their subordinates have a low level of operational-rear training, and a weak knowledge of the modern rear and that they do not know how to organize its arrangement and uninterrupted work specifically in support of the troops under the conditions involved in the conduct of modern combat operations.

The exercise also showed that the command and staff of the front and the army commanders and their staffs do not concern themselves enough with study of questions of the rear, do not direct its work specifically, and do not organize close coordination between the chiefs of arms of troops and services of the front and of the armies and the chiefs of the rear services and their staffs.

The deficiencies which have been revealed in the direction of the rear area cannot be tolerated. They must be decisively eliminated. Each general and officer of the rear services, the commanders and their staffs, must make a systematic improvement in their operational-rear training and in their practical skills in directing the rear area.

Despite the fact that this was a special rear exercise, a number of operational questions connected with the organization and conduct of the first offensive operation of a front and an army in the initial period of a war were also noted.

In the process of deciding operational questions, the generals and officers broadened their knowledge and experience in organizing and conducting modern operations.

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In addition, a number of major shortcomings in the work of generals, officers, and staffs were also revealed in their solution of operational questions, especially of those connected with the use of missile troops and with the application of nuclear weapons. These shortcomings indicate that some generals and officers still do not concern themselves systematically with the completion of their operational training.

The commander of the troops of the Carpathian Military District and the army commanders must pay serious attention to the shortcomings in the training of generals, officers, and staffs on the questions regarding operational preparations which have been mentioned and must eliminate them in the shortest period of time.

The chiefs of the rear, of missile troops and of artillery and of the missile-artillery armament of other districts who attended the exercise must understand that the defects which have been indicated also apply fully to them; they must draw the proper conclusions from this exercise, and they must switch immediately to the study of the many unclear and weakly resolved questions concerning the organization of the rear area.

On the results of the exercise, one can draw the general conclusion that it was, on the whole, instructive and useful for all those taking part. The experience of the exercise will permit the necessary conclusions on improving the organs of the operational rear of a front and of armies to be drawn, so that the solution of a number of most important questions on the organization and arrangement of the modern rear area may be more soundly resolved.

Comrades!

Approximately three months remain before the opening of the XXII Congress of the Communist Party of the Soviet Union. The whole Soviet people is seized with creative enthusiasm and is striving to approach this significant event in the life of the Party and of the nation with new achievements in the fulfilment of the Seven-Year Plan.

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Permit me to express my confidence that the personnel of the Ground Troops and of the Carpathian Military District will apply all its strength and knowledge to a further increase in the level of combat preparations and combat readiness and, together with the whole Soviet people, will give a worthy welcome to the XXII Congress of our own native Communist Party.

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NOTE: The following are expansions of abbreviations which appear on the sketches. Those items marked with an asterisk were not expanded in the text, and therefore are subject to error.

<u>CYRILLIC</u>	<u>TRANSLITERATION</u>	<u>EXPANSION</u>
A		
A	A	Army
A	A	*Artillery
"A"	"A"	Atomic
ад	ad	Artillery division
адиб	adib	Fighter-bomber aviation division
аиптап	aiptap	Army tank-destroyer artillery regiment
ак	ak	Army corps
(AM)	(AM)	American forces
апабр	apabr	*Army field artillery brigade
арбр	arbr	Army missile brigade
арпд	arpd	Army missile transport battalion
AT	AT	*Vehicle
азенраб "М"	azenrab "M"	Army antiaircraft missile brigade type "M"
B		
бркп	brkp	*Armored Cavalry Regiment
бртд	brtd	Armored division
BT	BT	*Armored

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CYRILLIC

TRANSLITERATION

EXPANSION

V

ВА

VA

Air army

ВДД

vdd

Airborne division

ВГБ

VGB

Military Hospital Base

ВОСО

VOSO

Military communications

ВТР

VTR

Temporary Transshipping Area

В/С

V/S

Unloading station

ВТАД

VTAD

Transport aviation division

ВТАП

VTAP

Transport aviation regiment

G

Г

G

Fuel

Г

G

Howitzer

ГБ

GB

Hospital base

грпа "Р"

grpa "R"

*Field artillery group "Redstone"

D

Д

d

Division

ДИБ

div

Division

ДН

dn

Battalion

доукомпн

doukompl

Before being brought up
to strength

Copy No. _____

~~SECRET~~

SECRET

C8DB-3/649,129

CYRILLIC

TRANSLITERATION

EXPANSION

Zh

ждб

zhdb

Railroad brigade

Z

ЗКП

ZKP

Reserve command post

ЗКУ

ZKU

Sector commandant

ЗК

ZK

Station commandant

зенраб "М"

zenrab "M"

Antiaircraft missile brigade,
type "M"

зенрап "А"

zenrap "A"

Antiaircraft missile regiment,
type "A"

зенрап "С"

zenrap "S"

Antiaircraft missile regiment,
type "S"

I

иад

iad

Fighter aviation division

инк

inh

Engineer

иптабр

iptabr

Tank destroyer anti-tank brigade

K

"К"

"K"

Corporal

к Д-8

k D-8

By the 8th day

к исх 19.7

k iskh 19.7

By the end of 19 July

к 6.00 19.7

k 6.00 19.7

By 0600 19 July

КП

KP

Command post

к утру

k utru

By the morning of...

Copy No. _____

-105-

SECRET

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CSD-3/649,129

CYRILLIC

TRANSLITERATION

EXPANSION

М		
МПД	mpd	Motorized infantry division
МСД	msd	Motorized rifle division
Н		
НД 60 180	ND 180 ⁶⁰	*Bridge above water, 60 meters long, 180 ton capacity
О		
ОАРБ	carb	Independent vehicle repair brigade
"ОД"	"OD"	Honest John
ОДКБ	odkb	Independent traffic control brigade
ОМБ	omb	Independent bridge-building brigade
ОРБ	orb	Independent Reconnaissance Battalion
ОРДН	ordn	Independent missile battalion
ОРТБ	ortb	Independent missile-technical brigade
ОСМБ	osmb	Independent special bridge brigade
ОТАК	otak	*Independent heavy artillery corps
ОТА. (ПФБ)	ota. (PFB)	Section of mobile front base
ОТТР	otgr	Independent tank group
ОТПБ	otpb	Independent pipelaying brigade

Copy No. ____

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SECRET

CSDB-3/649,129

CYRILLIC

TRANSLITERATION

EXPANSION

P

П

P

Gun

П

P

*Provisions

ПА

PA

Field army

ПАБ

PAB

Mobile army base

ПД

pd

Infantry division

ПФБ

PTB

Mobile front base

ПО

PO

Border guard detachment

ПОПОЛН

popoln

Replacements

ПРТБ

prtb

Mobile technical repair base

ПТ

PT

*Antitank

R

(P/C)

(R/S)

Radio station

РТ

RT

Missile fuel

S

СГА

SGA

Northern Group of Armies

с утра

s utra

From the morning of...

СВ

SV

*Signals

Copy No. _____

SECRET

SECRET

CSDB-3/649,129

CYRILLIC

TRANSLITERATION

EXPANSION

T

ТА

TA

Tank army

ТД

td

Tank division

ТФБ

TFB

Rear supply base of a front

ТОПО

TOPO

*Topographical section

ТНУ

TPU

Rear area control point

ТЗБ

ТЗБ

*Fuel base

Ts

ЦГА

TsGA

Central Group of Armies

F

ФР

FR

French forces

ФрБР

frbr

Front missile brigade

ФРГ

FRG

West German forces

ФР подч.

fr podch.

Subordinated to the front

Kh

Х

Kh

*Chemical

Tu

ЮГА

TuGA

Southern Group of Armies

E

Бск

Bsk

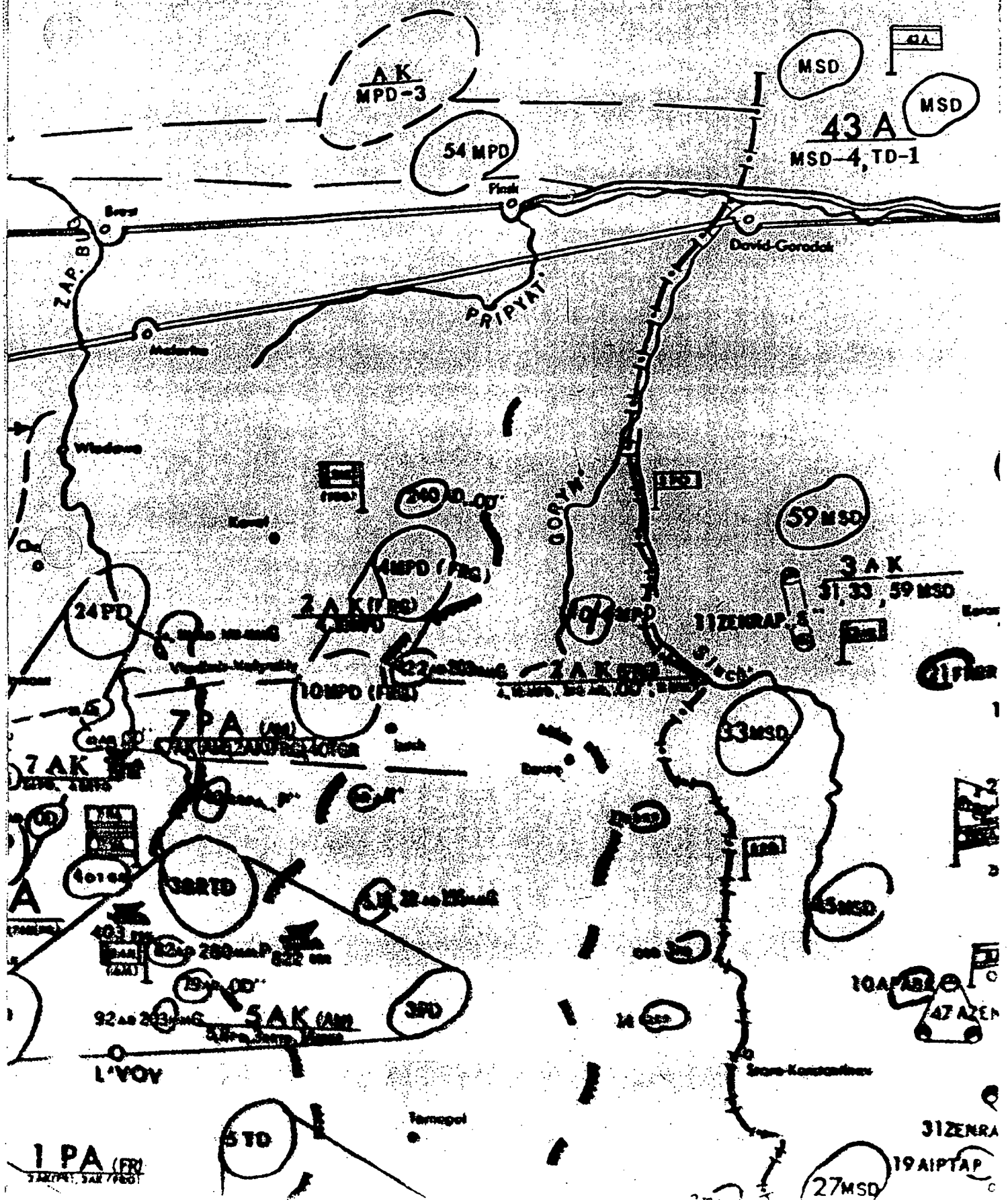
Squadron

Copy No. 47

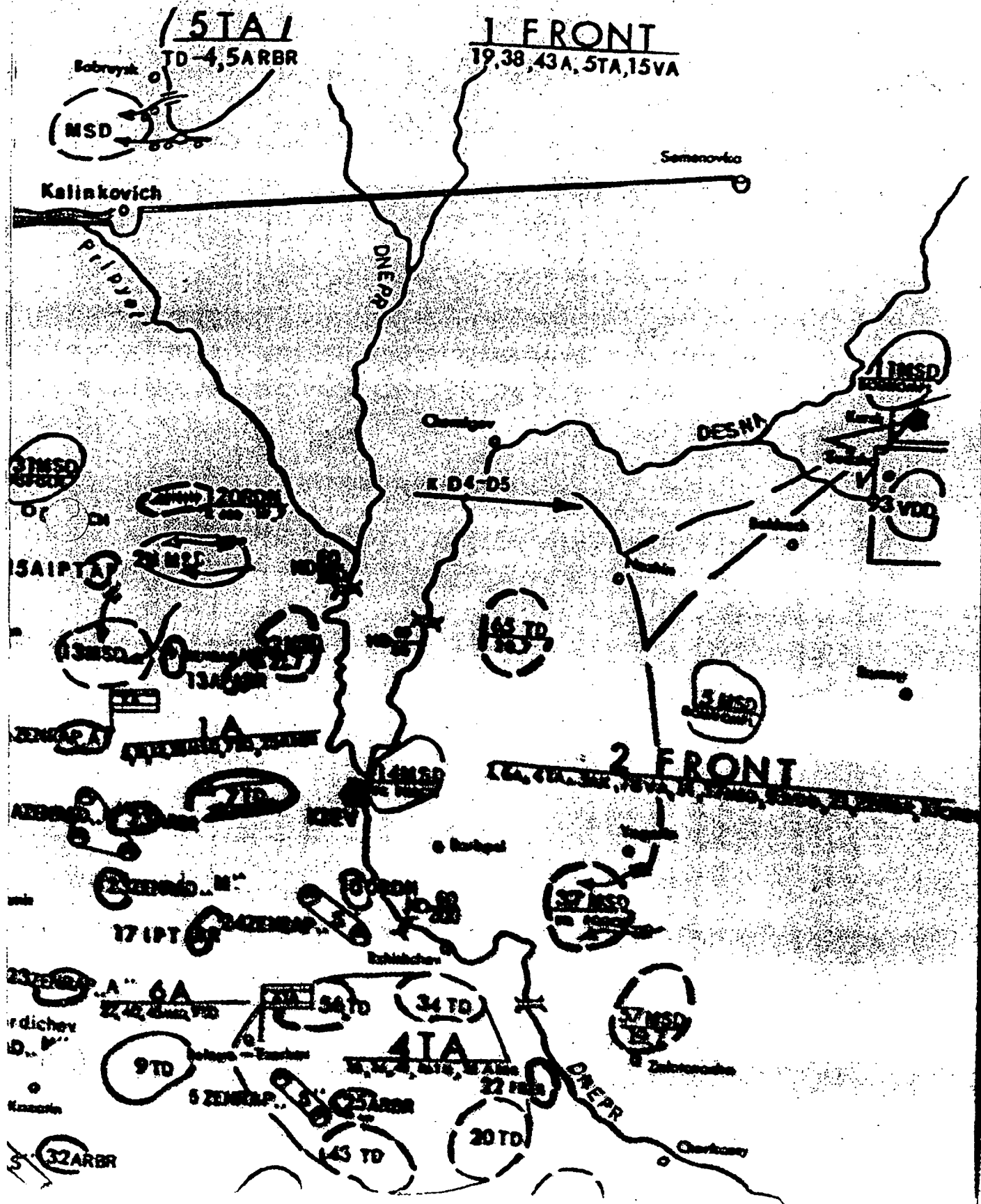
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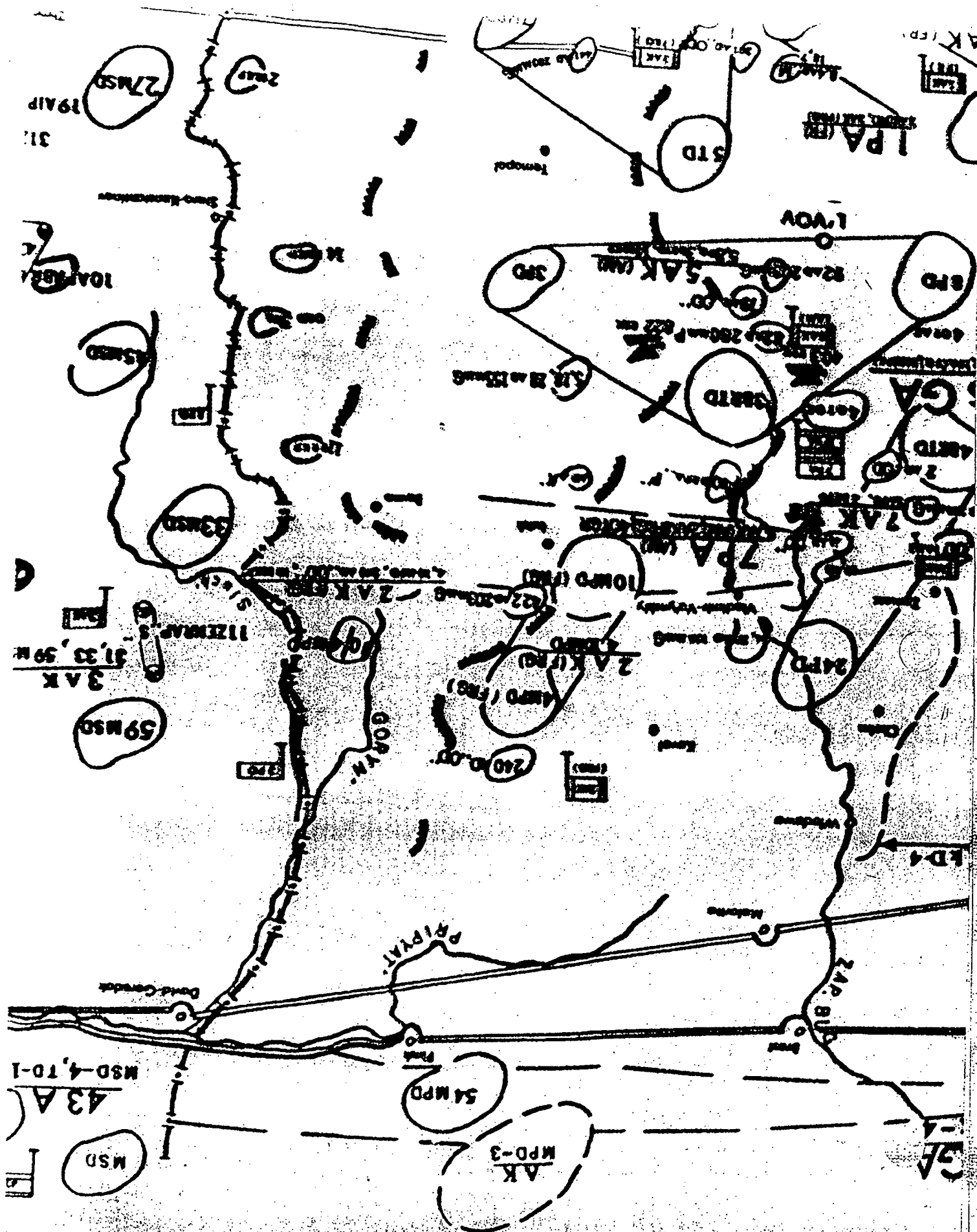
**FOLLOWING PAGES
BEST COPY AVAILABLE**

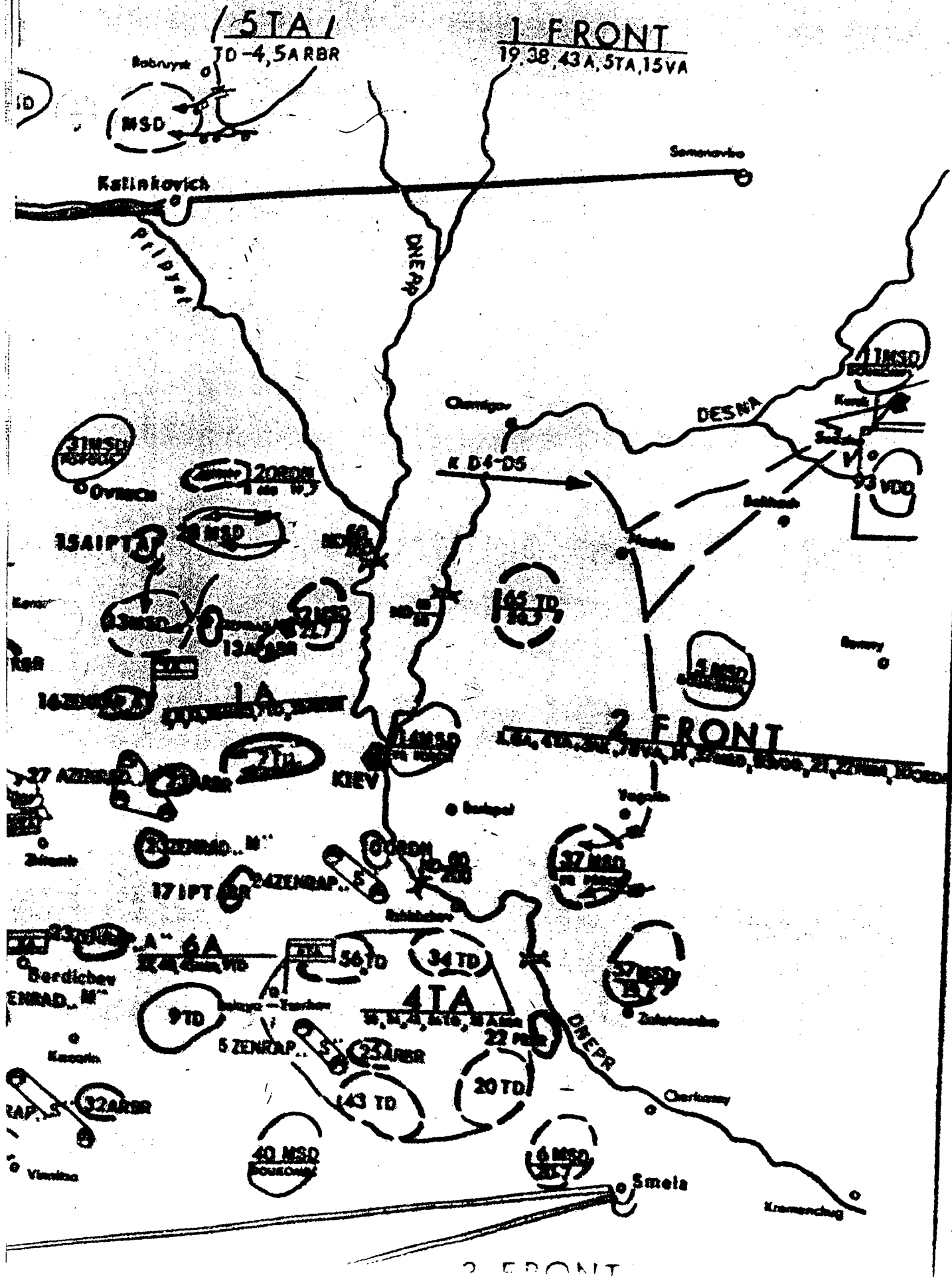
THE OPERATIONAL METHODOLOGY



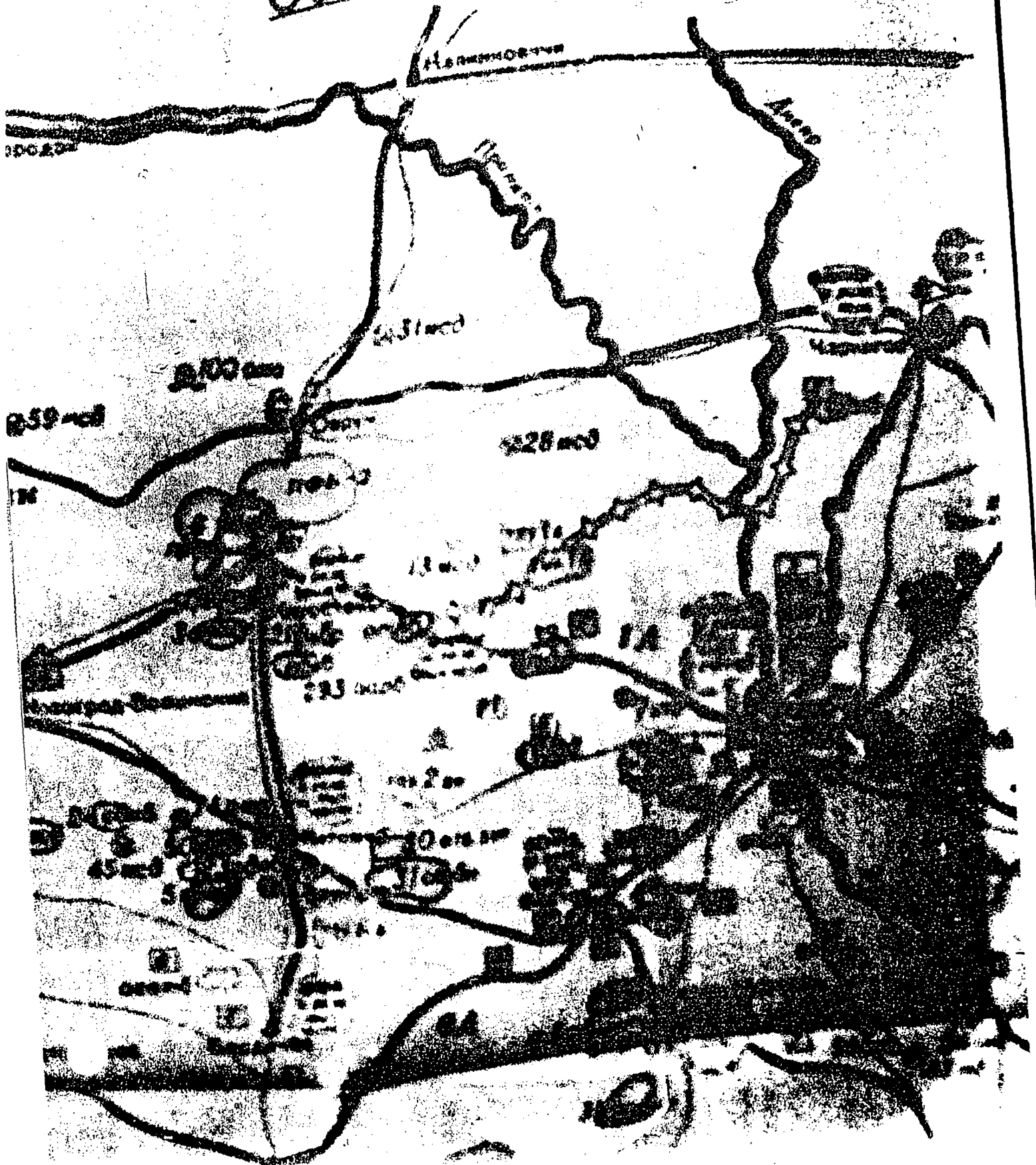
TASKS OF THE SIDES







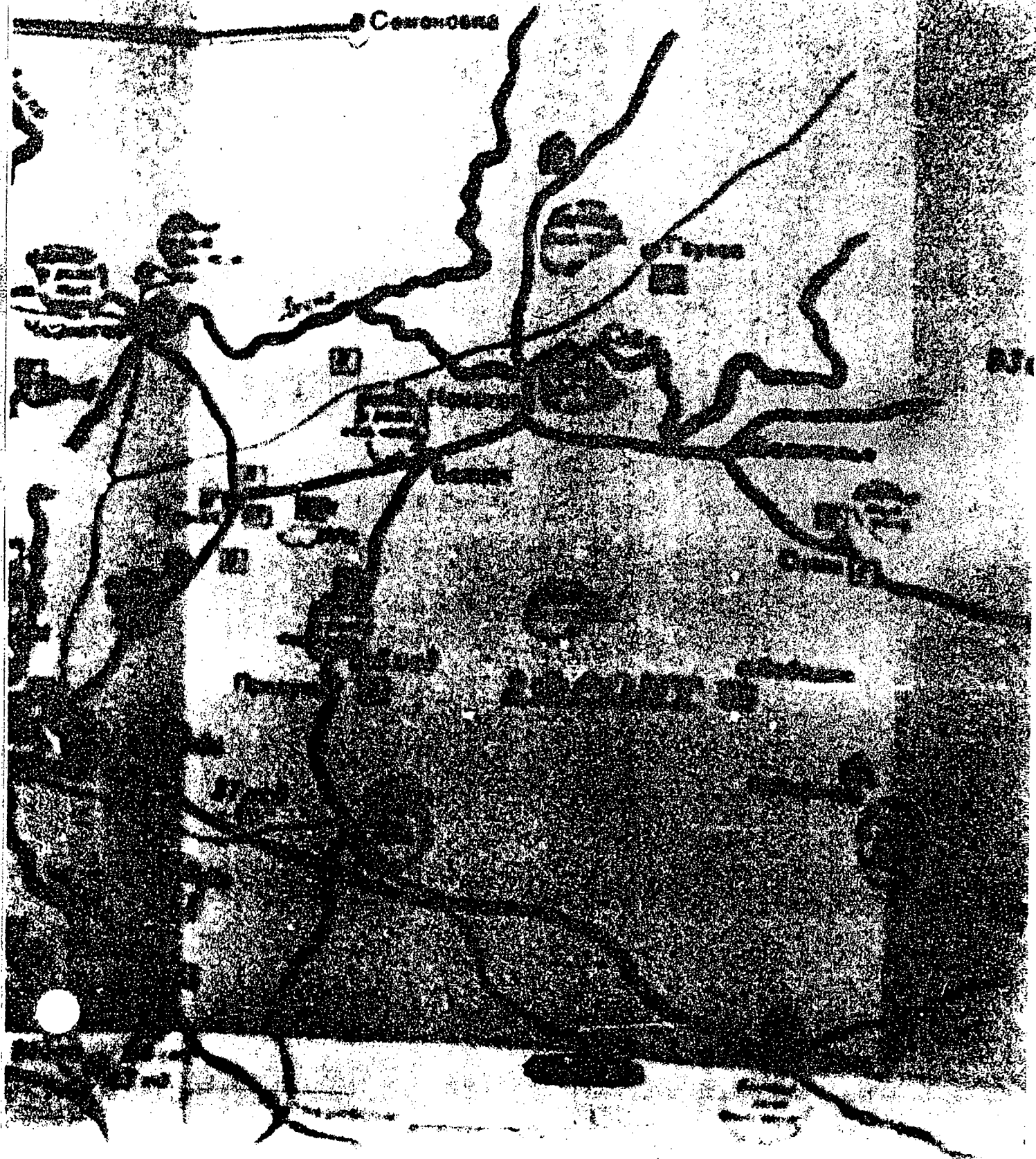
Обстановка по тылу на 7.00



HA 7.00 18.7

CSM 3/64 120

SEA 6/1/12



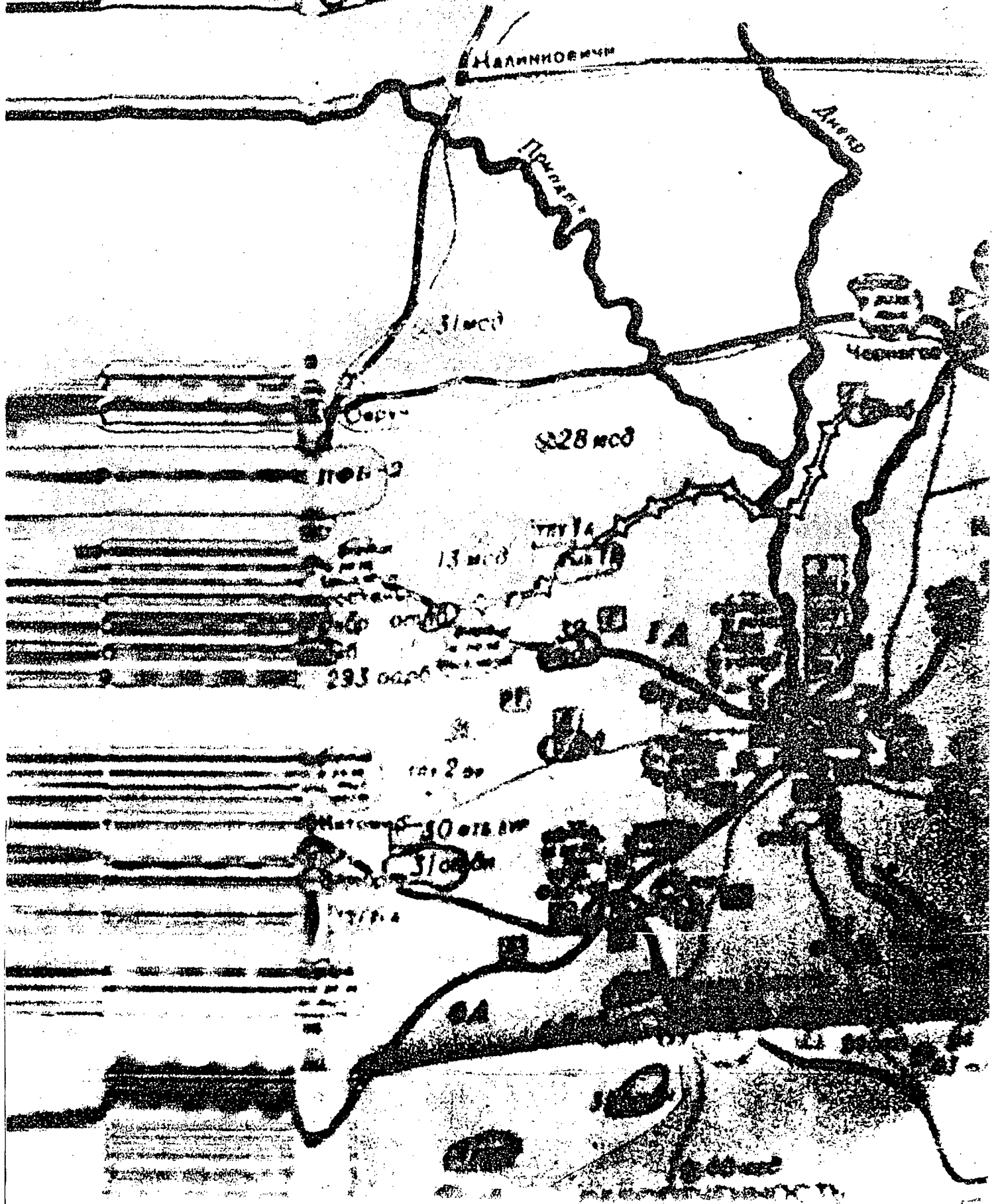


ду на 7.00 18.7

CSDB-3/649.121



Обстановка по тылу на 7.0

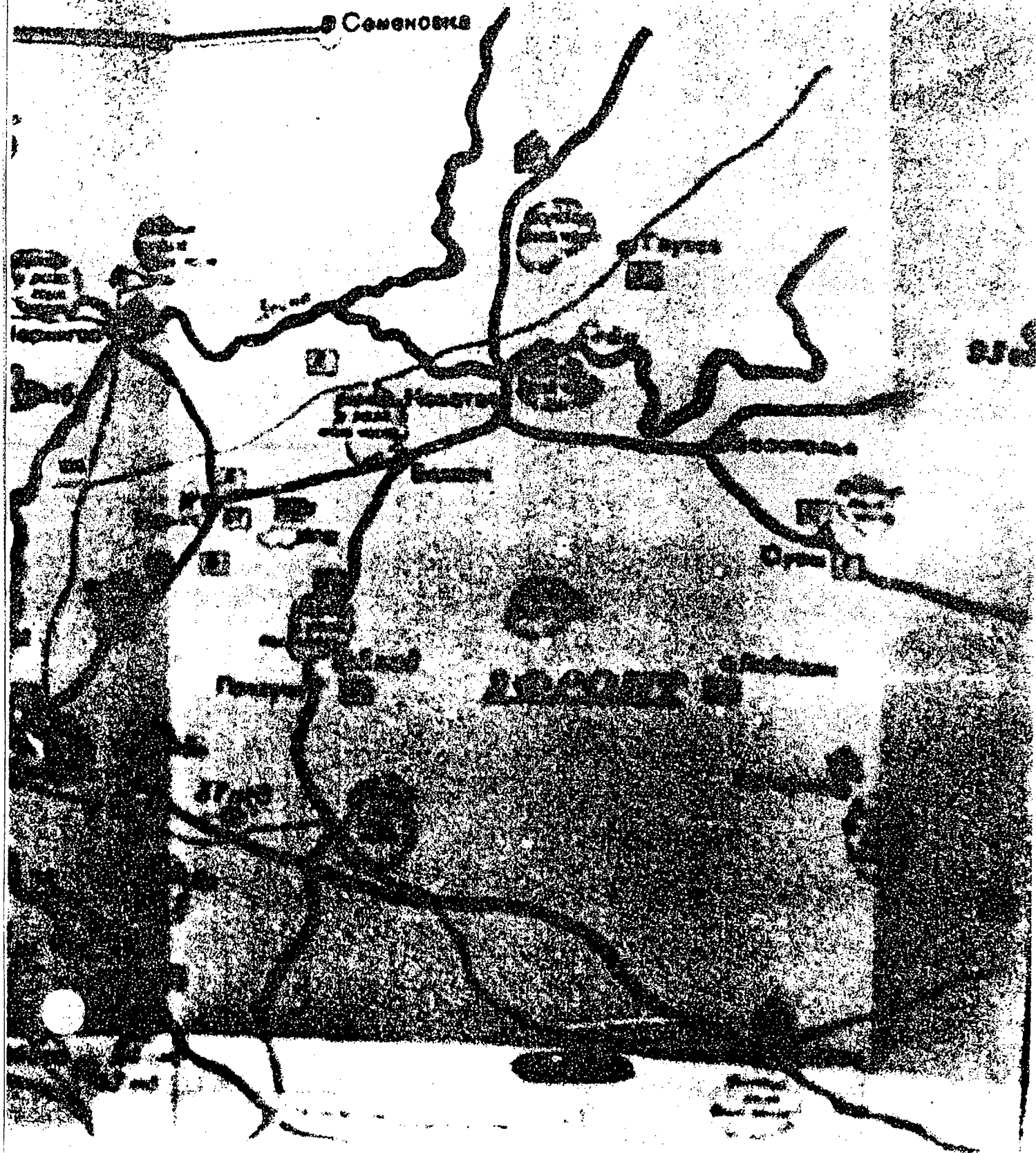


ONLY

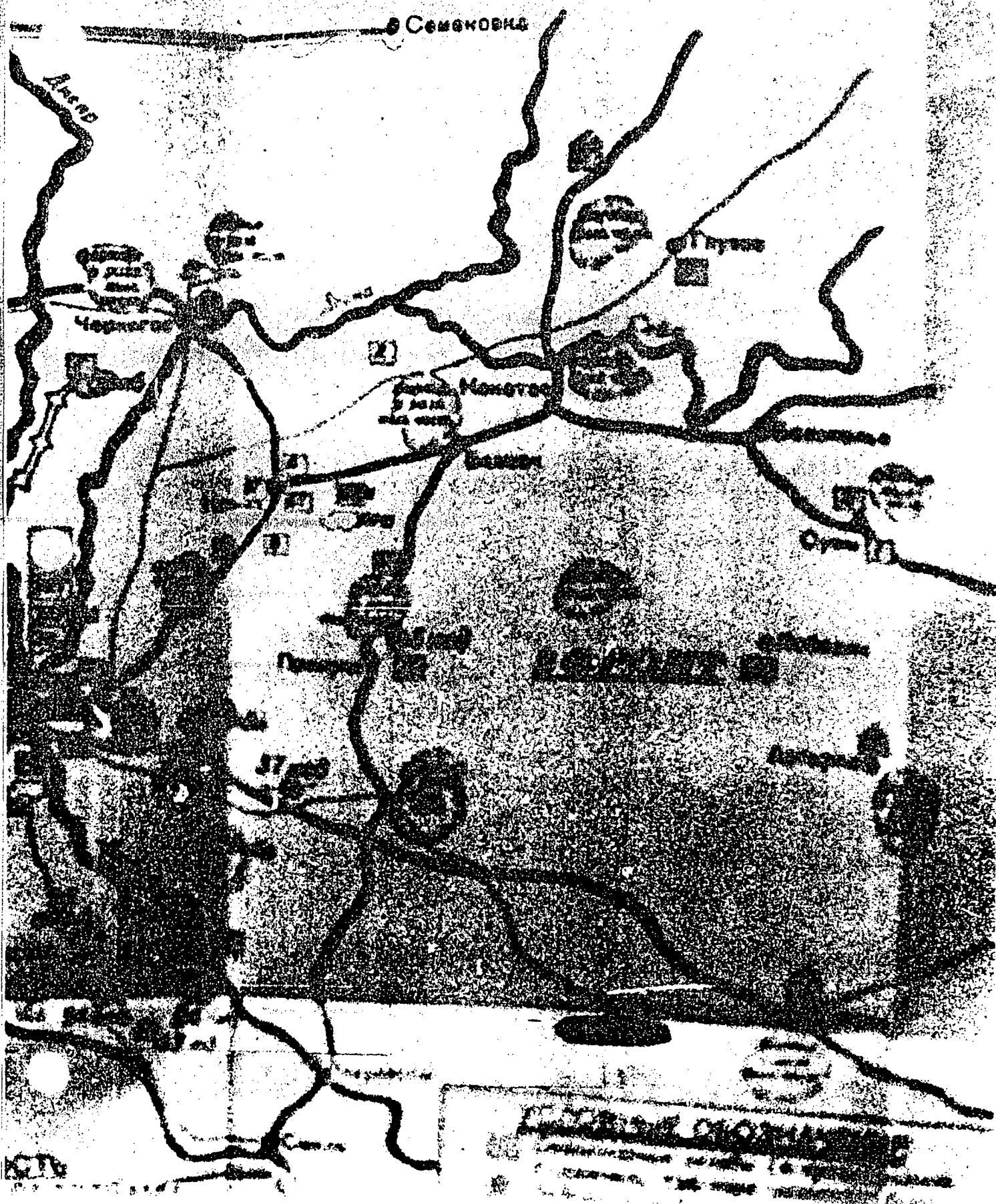
CSDE-3/640, 120

SECRET

12 7.00 18.7



1944



1944

Решения сторон по обстановке

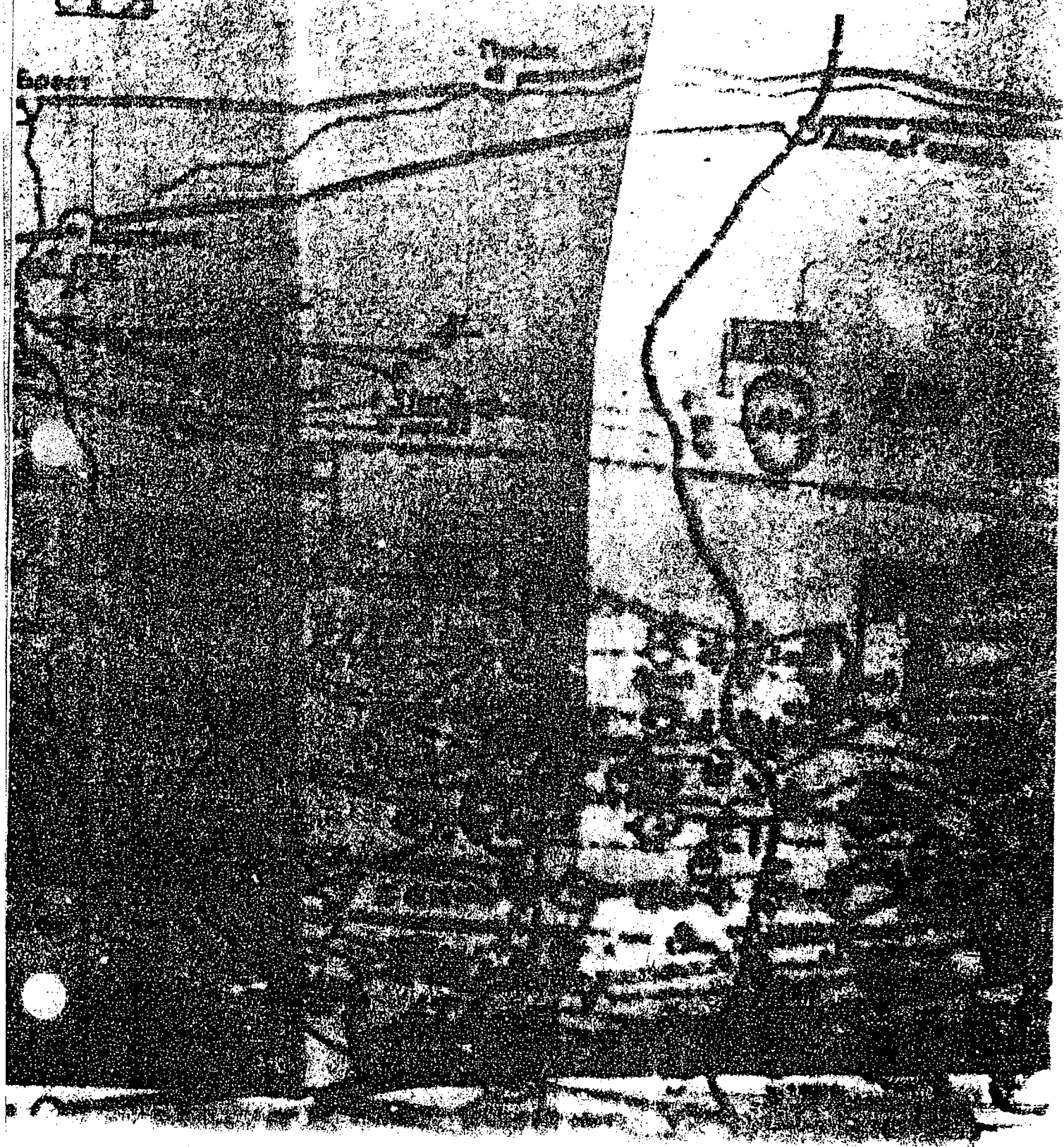
ССА

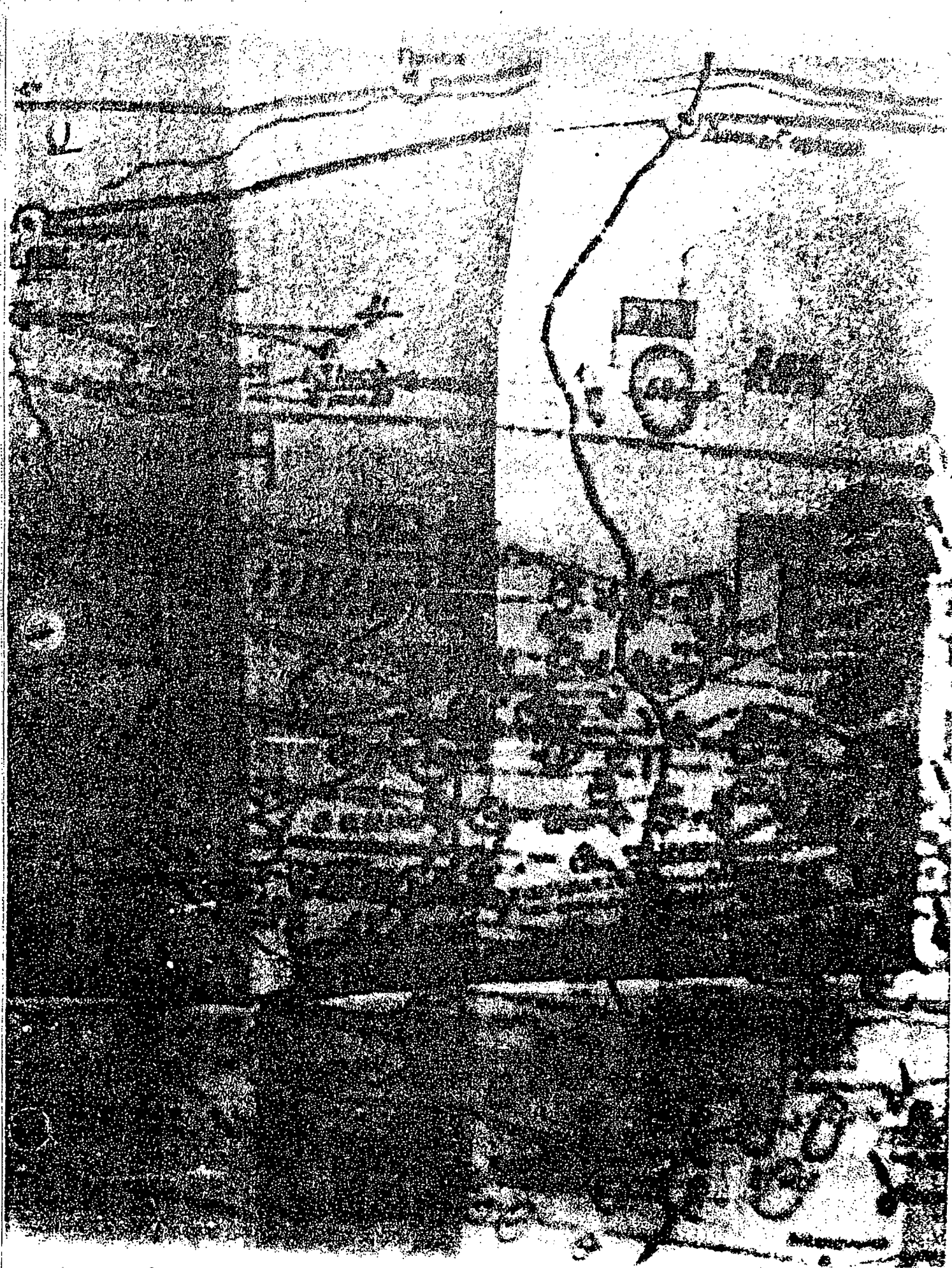
Боец

Пункт

С

Дорога





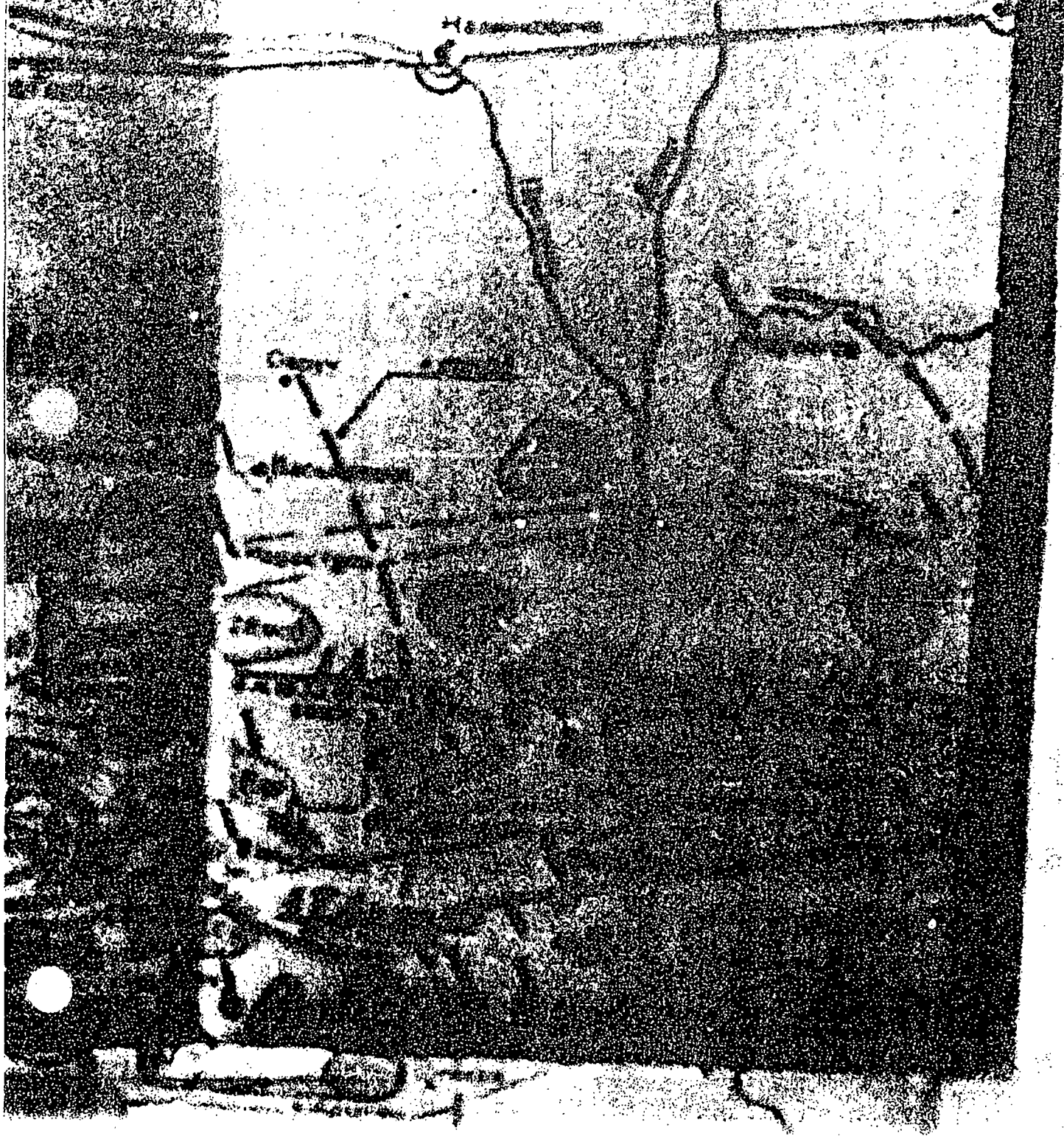
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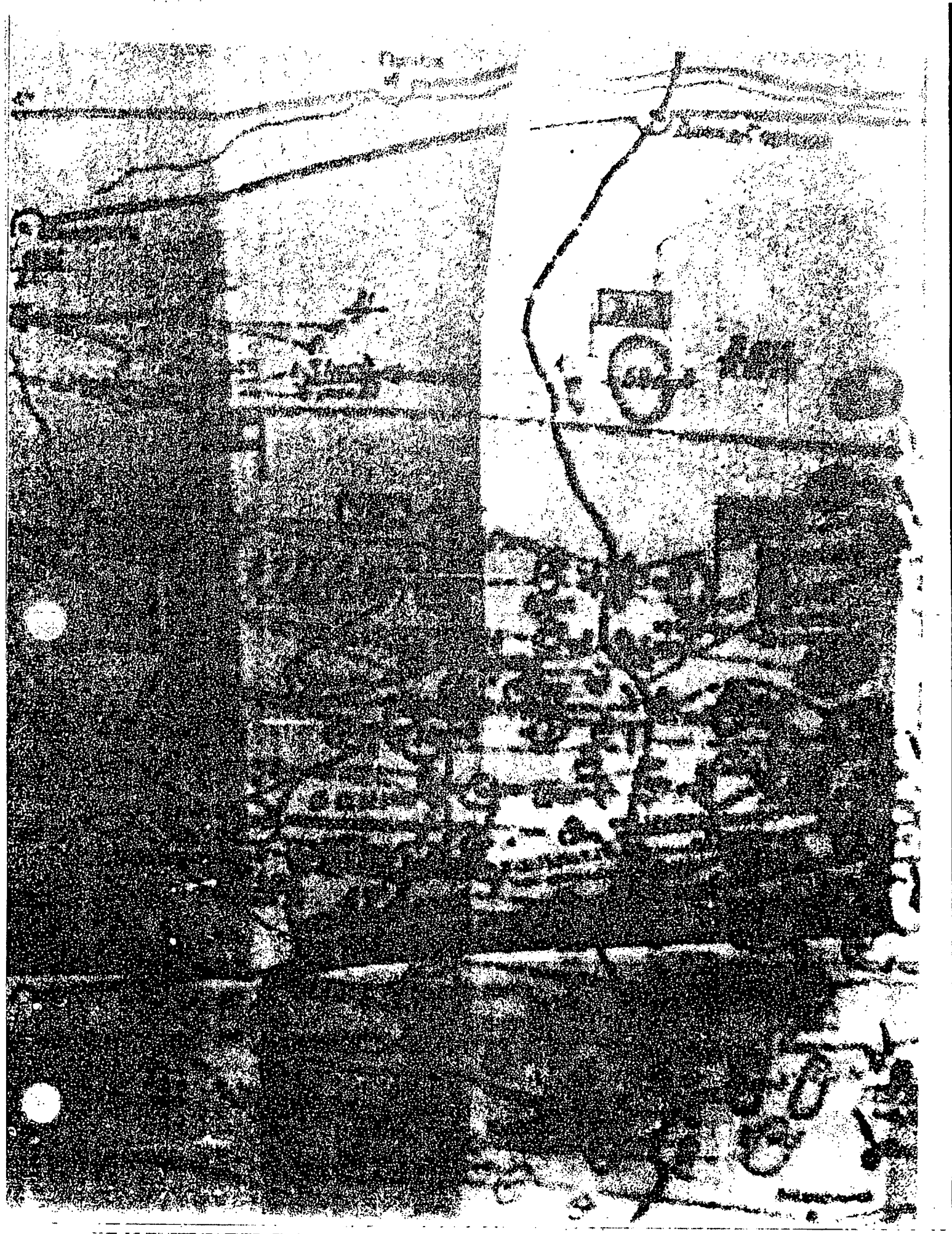
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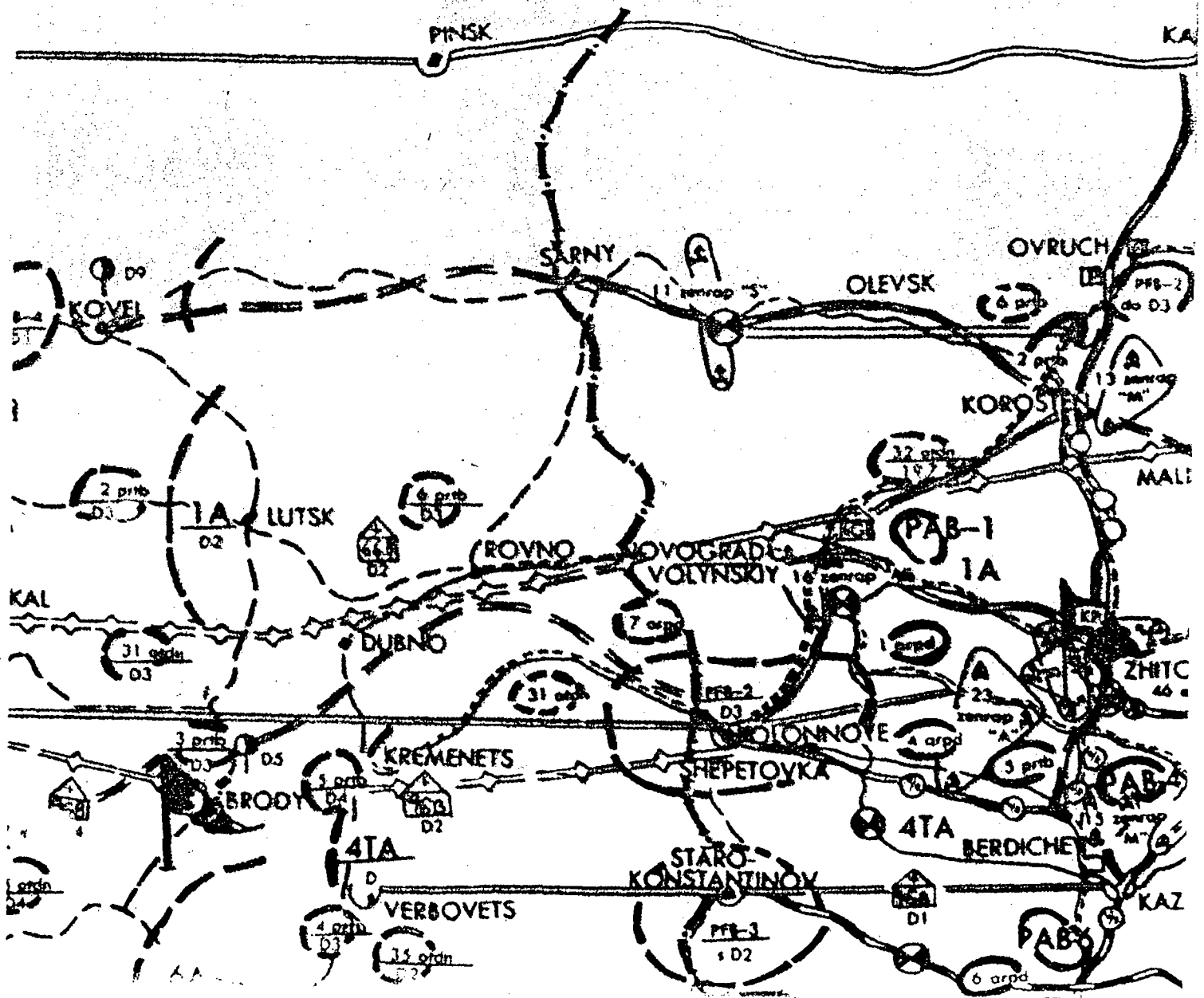
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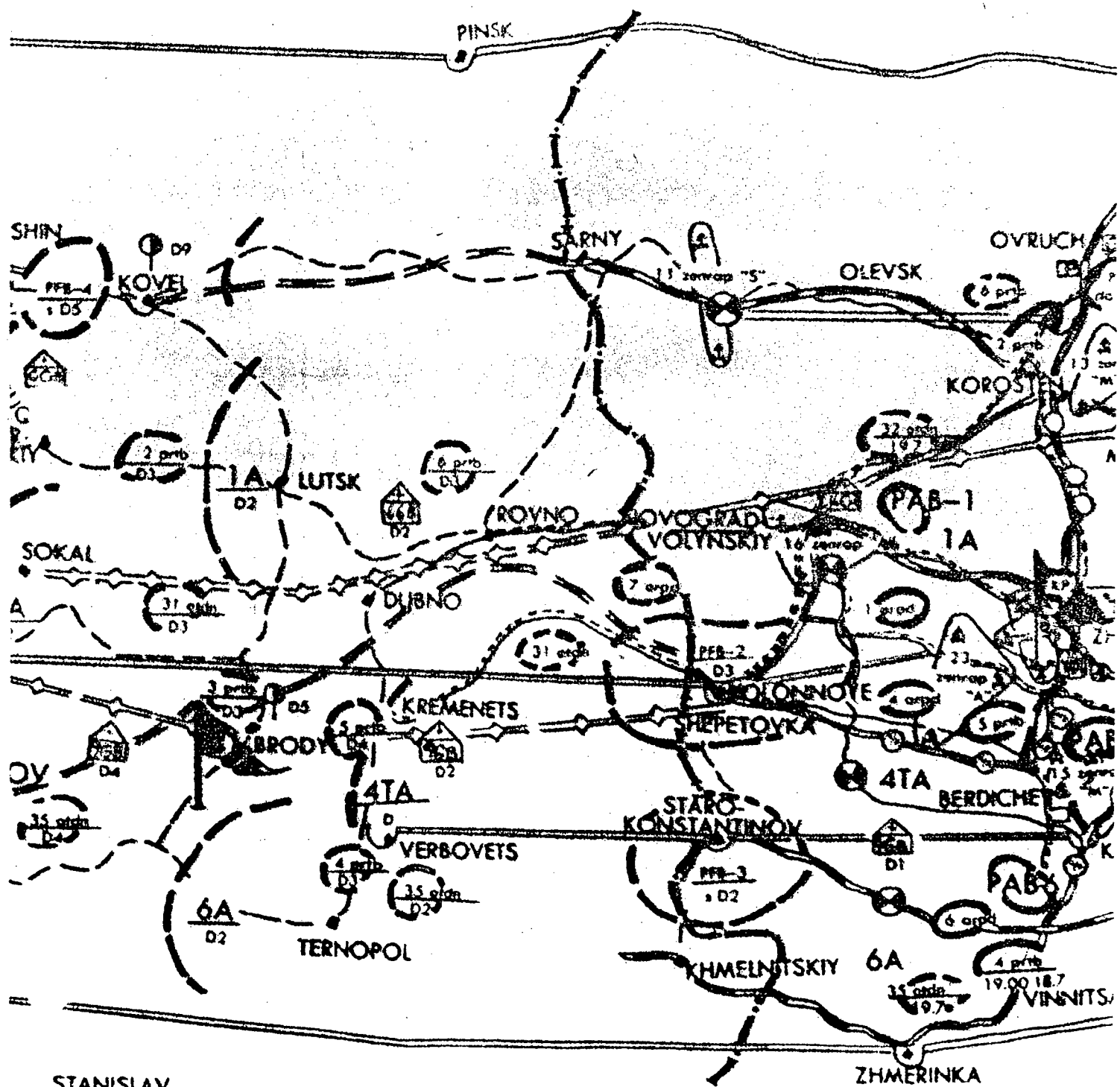
ORGANIZATION OF THE REAR AREA OF THE 2ND FRONT IN THE OFFENSE



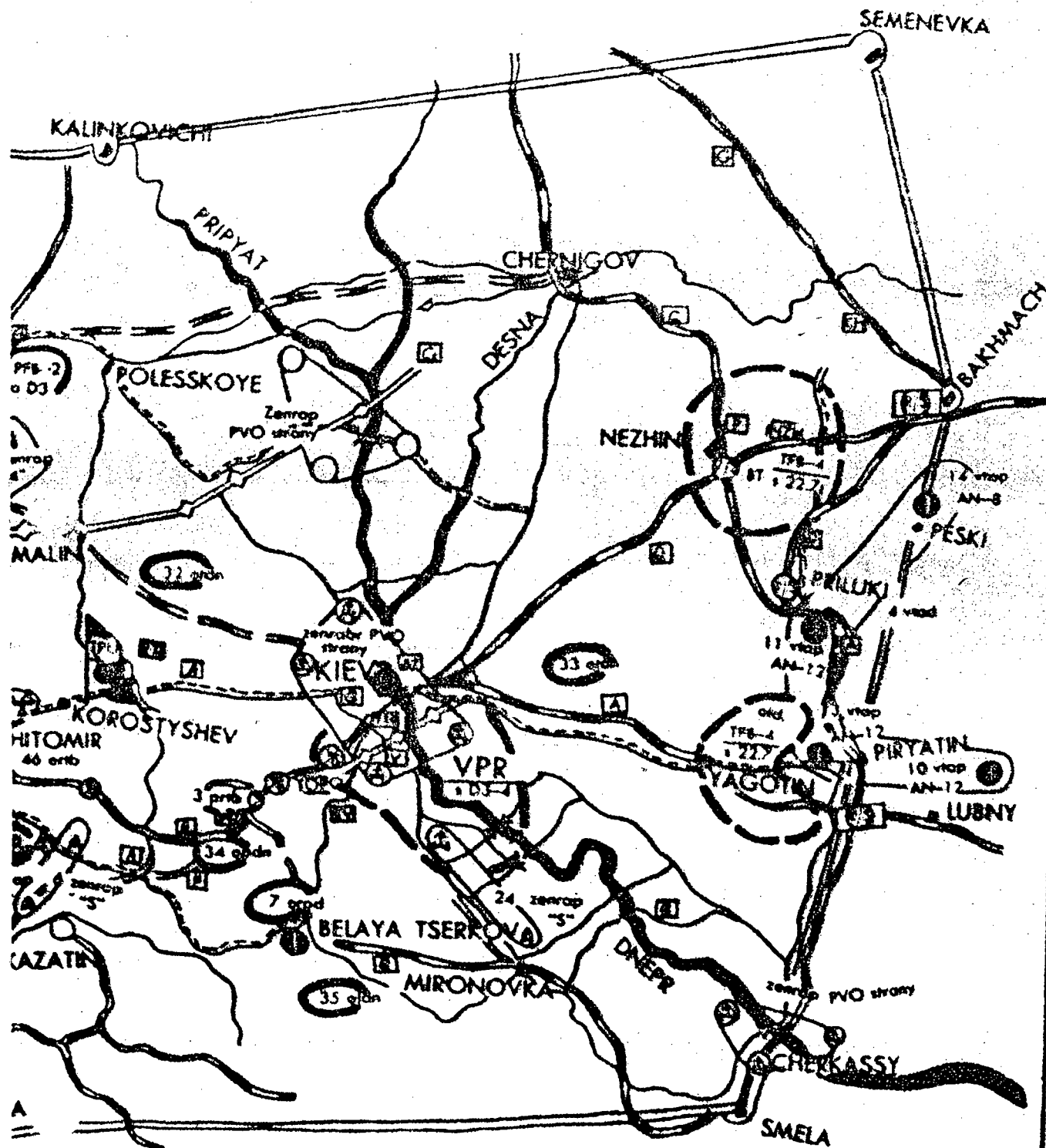
This is a detailed black and white map of the Kiev region in Ukraine. The map shows major cities, rivers, and military installations. Key locations include:

- Cities and Towns:** Kiev (center), Chernigov (top center), Yagoin (right), Piryatin (bottom right), Korostyshev (bottom left), and others like Kalinkovichi, Poleskoye, and Belaya Tserkva.
- Rivers:** The Dniepr River flows through the region, with other rivers like the Desna and Prpyat also shown.
- Military Installations:** Numerous symbols and codes are scattered across the map, indicating various military units and bases. Examples include "13 zentrap", "32 gdn", "33 gdn", "34 gdn", "35 gdn", "36 gdn", "37 gdn", "38 gdn", "39 gdn", "40 gdn", "41 gdn", "42 gdn", "43 gdn", "44 gdn", "45 gdn", "46 gdn", "47 gdn", "48 gdn", "49 gdn", "50 gdn", "51 gdn", "52 gdn", "53 gdn", "54 gdn", "55 gdn", "56 gdn", "57 gdn", "58 gdn", "59 gdn", "60 gdn", "61 gdn", "62 gdn", "63 gdn", "64 gdn", "65 gdn", "66 gdn", "67 gdn", "68 gdn", "69 gdn", "70 gdn", "71 gdn", "72 gdn", "73 gdn", "74 gdn", "75 gdn", "76 gdn", "77 gdn", "78 gdn", "79 gdn", "80 gdn", "81 gdn", "82 gdn", "83 gdn", "84 gdn", "85 gdn", "86 gdn", "87 gdn", "88 gdn", "89 gdn", "90 gdn", "91 gdn", "92 gdn", "93 gdn", "94 gdn", "95 gdn", "96 gdn", "97 gdn", "98 gdn", "99 gdn", "100 gdn".
- Other Features:** The map includes various symbols for military units, such as "13 zentrap", "32 gdn", "33 gdn", "34 gdn", "35 gdn", "36 gdn", "37 gdn", "38 gdn", "39 gdn", "40 gdn", "41 gdn", "42 gdn", "43 gdn", "44 gdn", "45 gdn", "46 gdn", "47 gdn", "48 gdn", "49 gdn", "50 gdn", "51 gdn", "52 gdn", "53 gdn", "54 gdn", "55 gdn", "56 gdn", "57 gdn", "58 gdn", "59 gdn", "60 gdn", "61 gdn", "62 gdn", "63 gdn", "64 gdn", "65 gdn", "66 gdn", "67 gdn", "68 gdn", "69 gdn", "70 gdn", "71 gdn", "72 gdn", "73 gdn", "74 gdn", "75 gdn", "76 gdn", "77 gdn", "78 gdn", "79 gdn", "80 gdn", "81 gdn", "82 gdn", "83 gdn", "84 gdn", "85 gdn", "86 gdn", "87 gdn", "88 gdn", "89 gdn", "90 gdn", "91 gdn", "92 gdn", "93 gdn", "94 gdn", "95 gdn", "96 gdn", "97 gdn", "98 gdn", "99 gdn", "100 gdn".

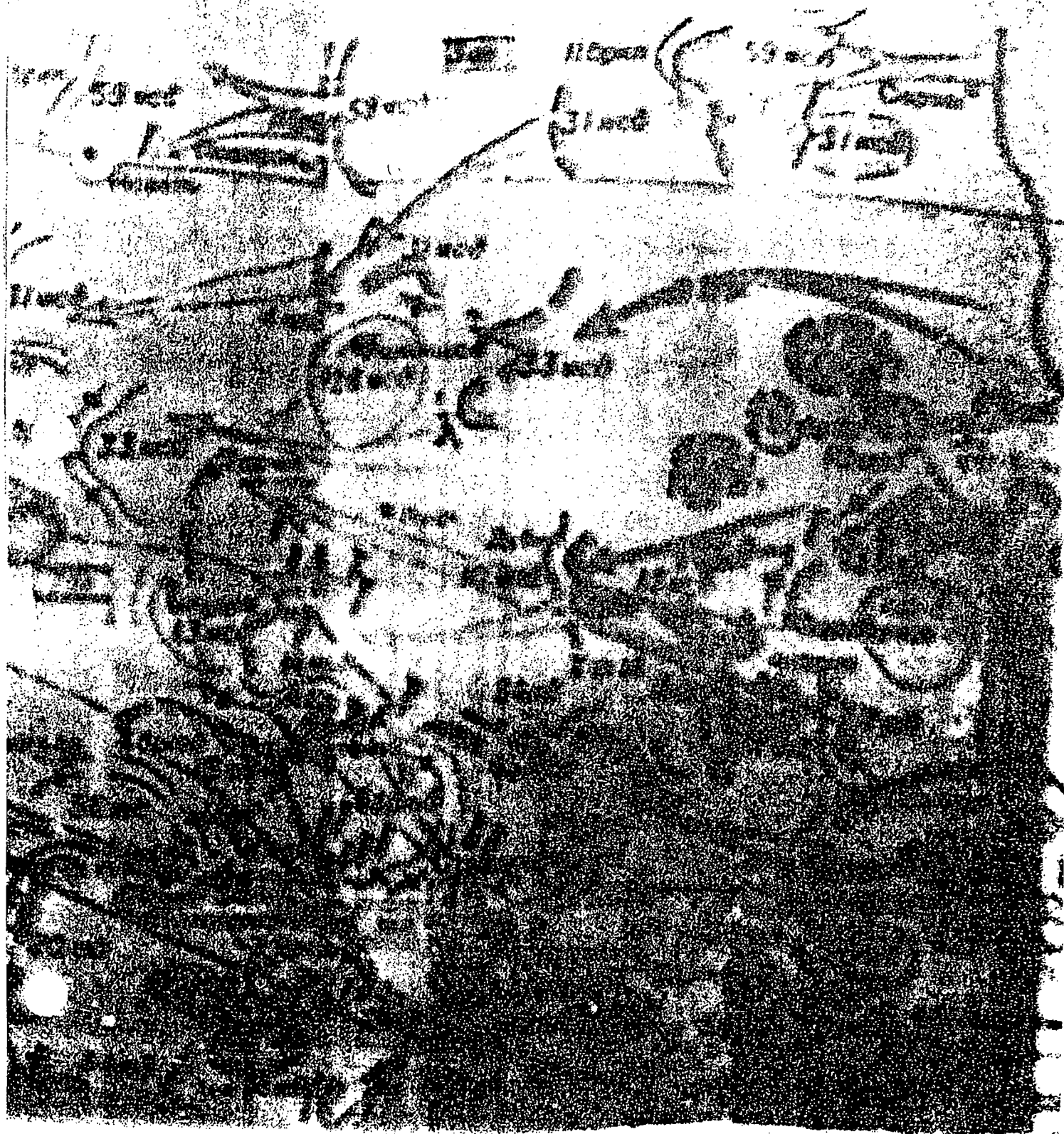
ORGANIZATION OF THE REAR AREA OF THE 2ND FRONT IN THE OF



DEFENSIVE OPERATION



ХОД БОЕВЫХ ДЕЙСТВИЙ



20-22.7

CSDP-3/549-123

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1990

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26





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— **THE** —

1990

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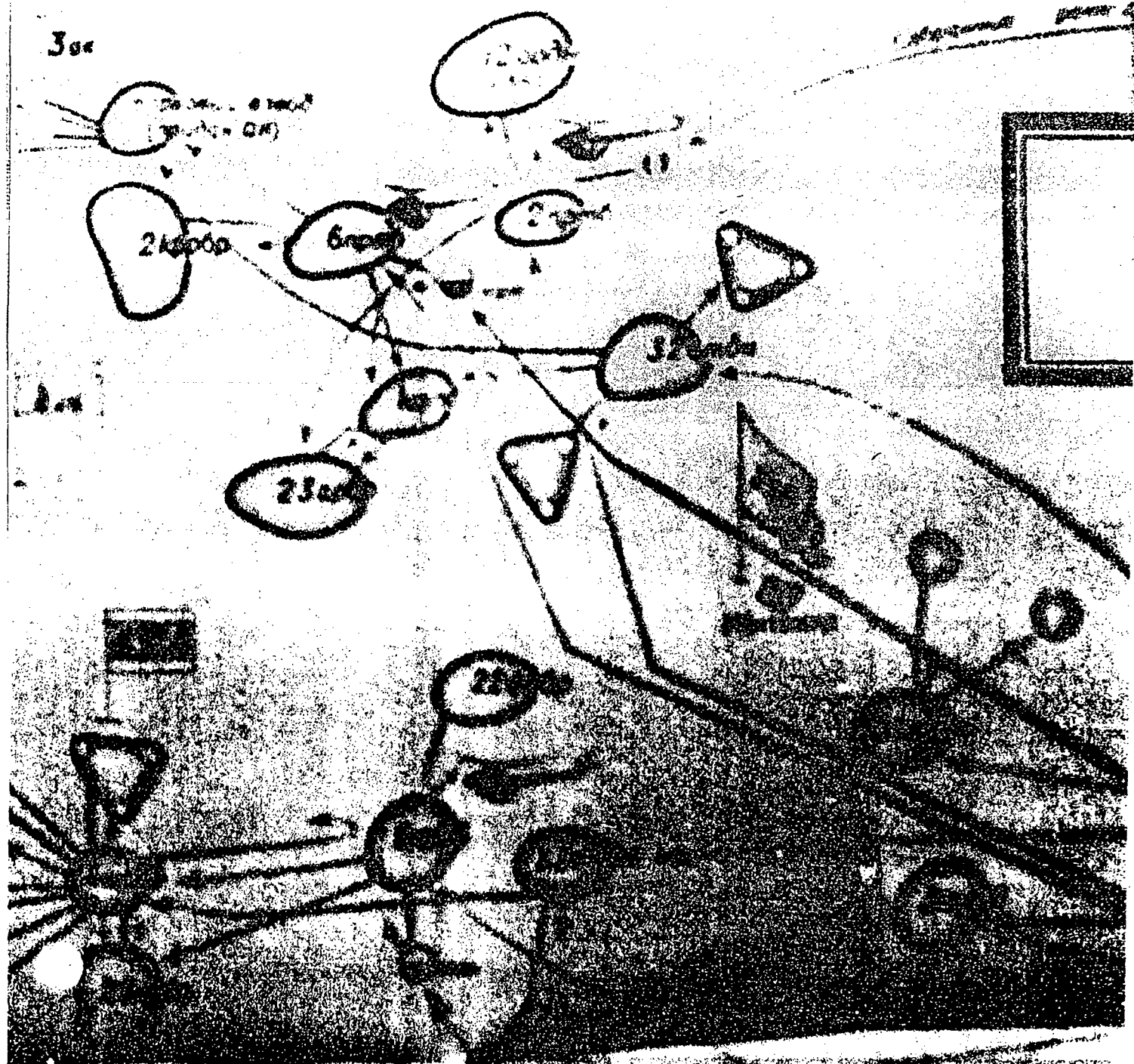
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4

THE UNIVERSITY OF CHICAGO

Обеспечение войск фронта ракетами и



А. И. РАКЕТЫ И ТОПЛИВО

Support of Troops of the Front with
Missiles and Missile Fuel

304

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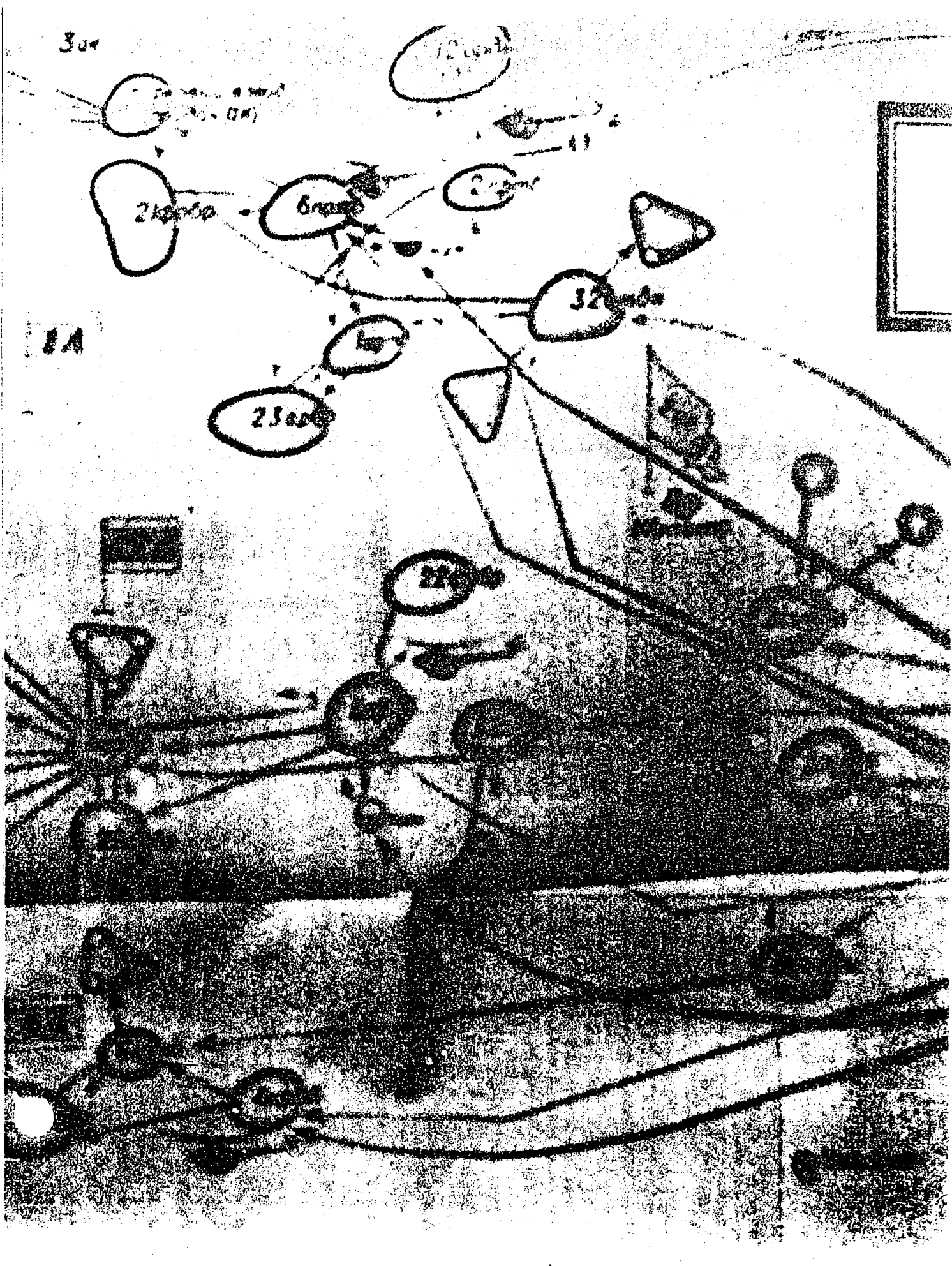
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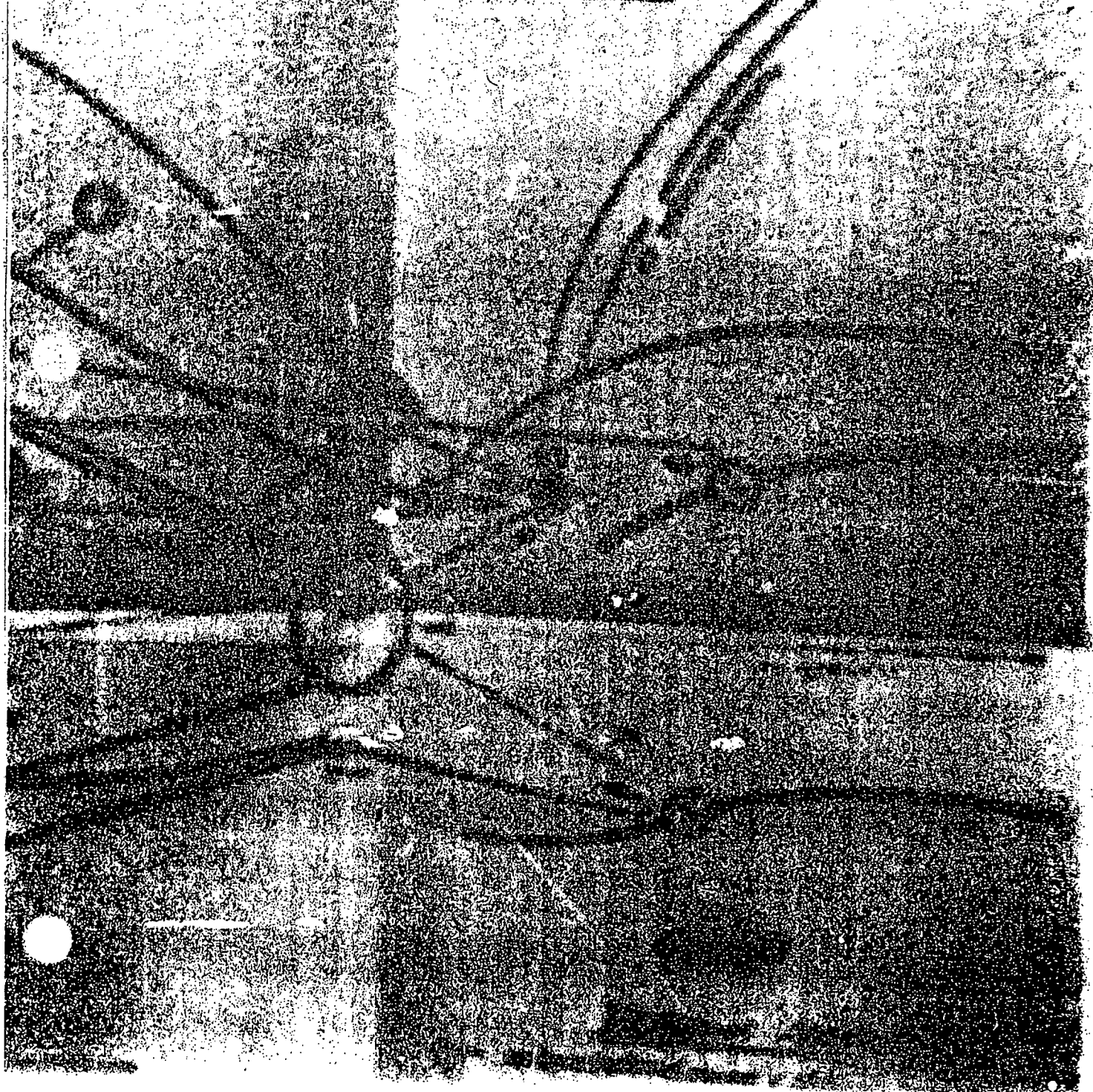
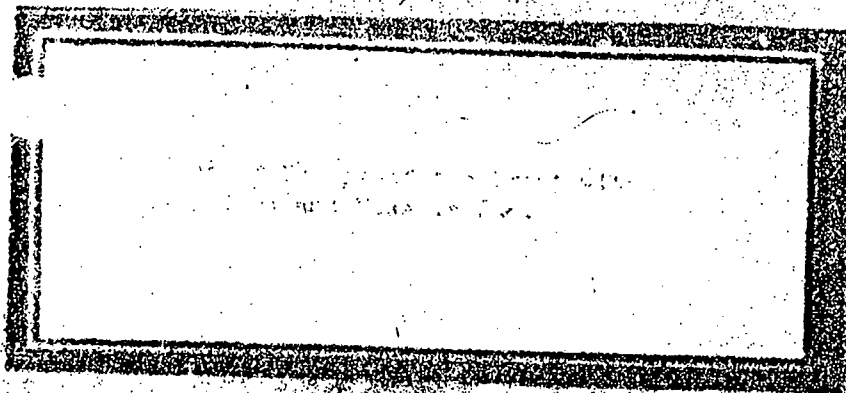
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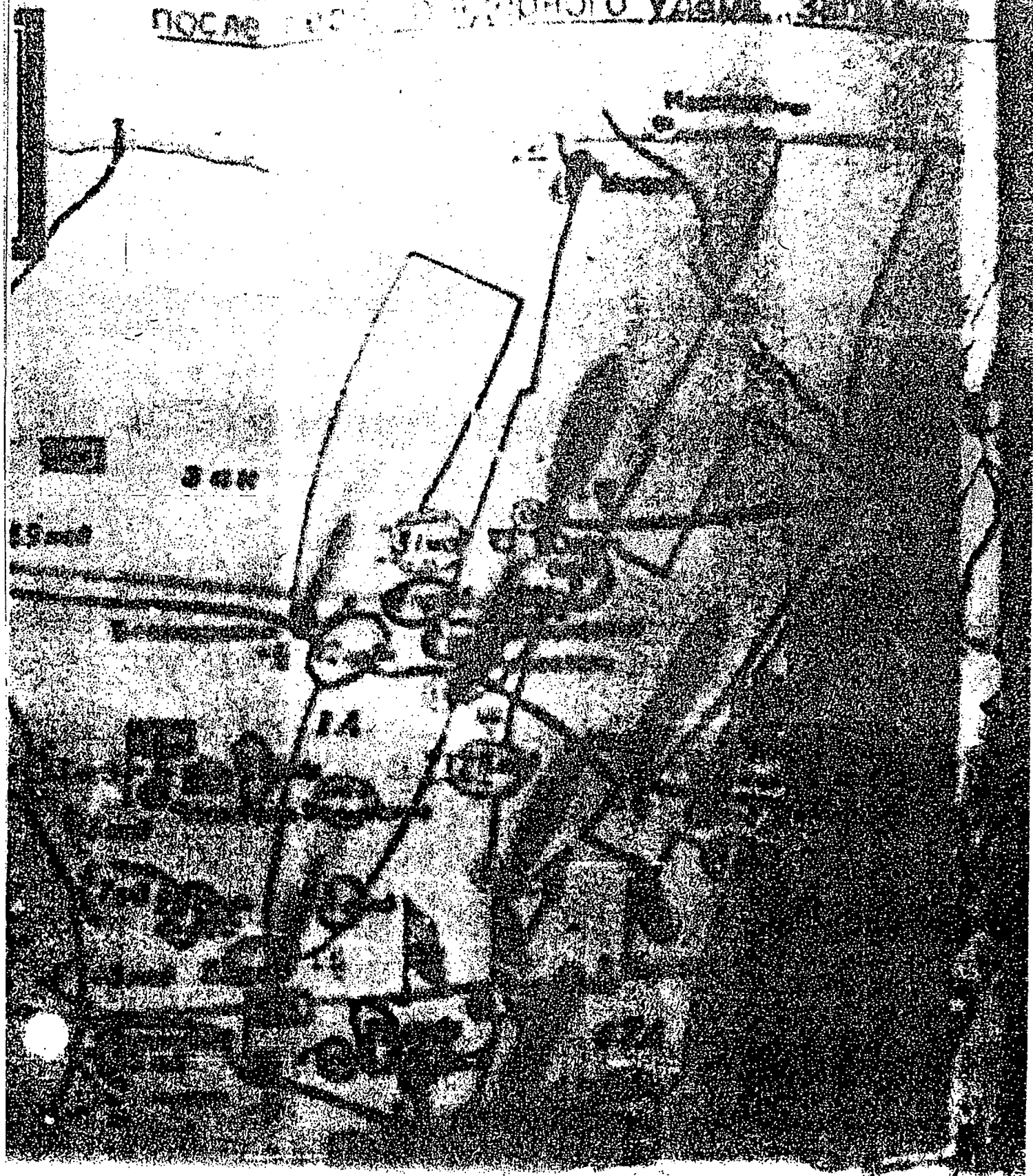
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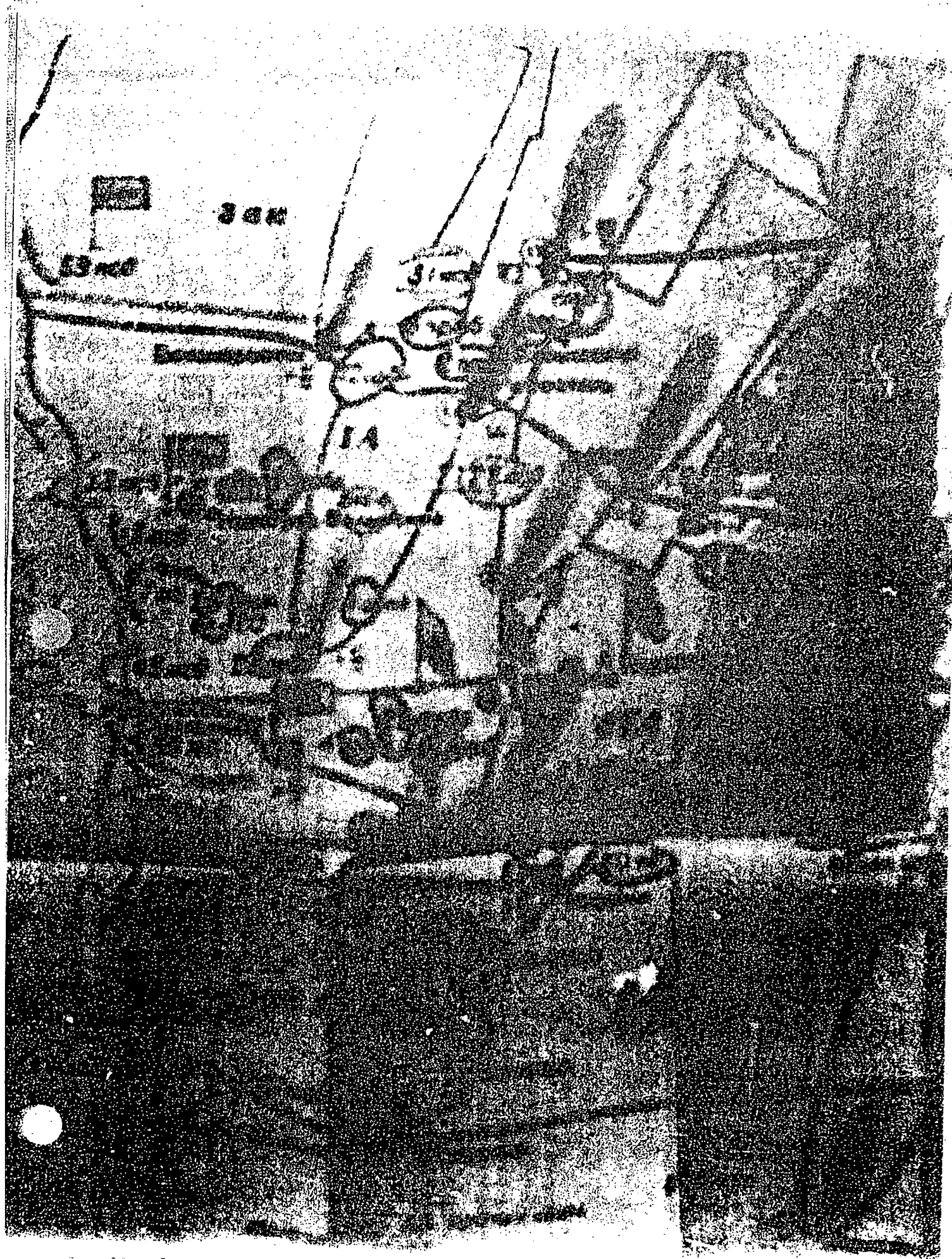


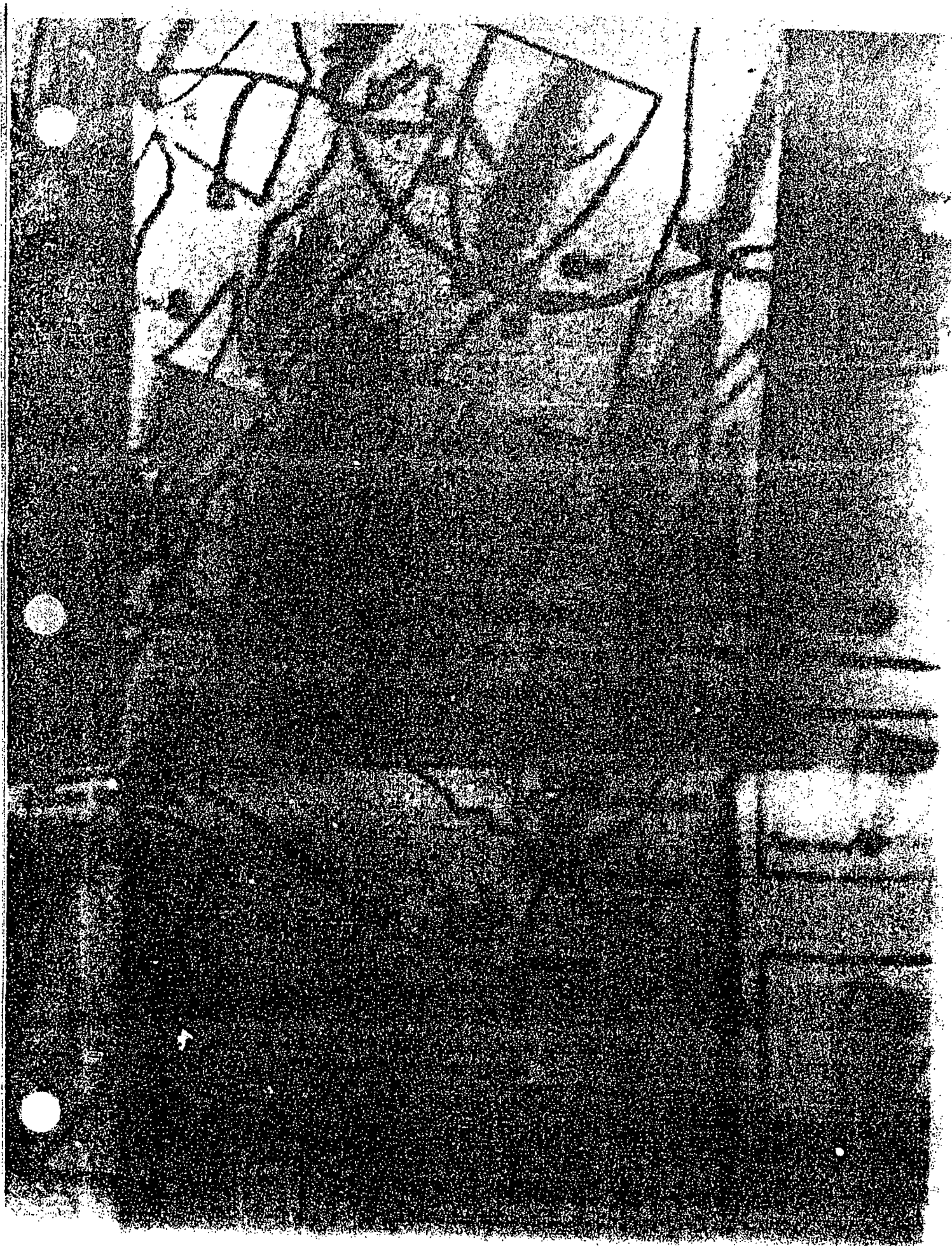
ЦИОННАЯ ОБСТАНОВКА В ПОЛОС
ПОСЛЕ ПЕРВОГО УДАРА ЗАДА



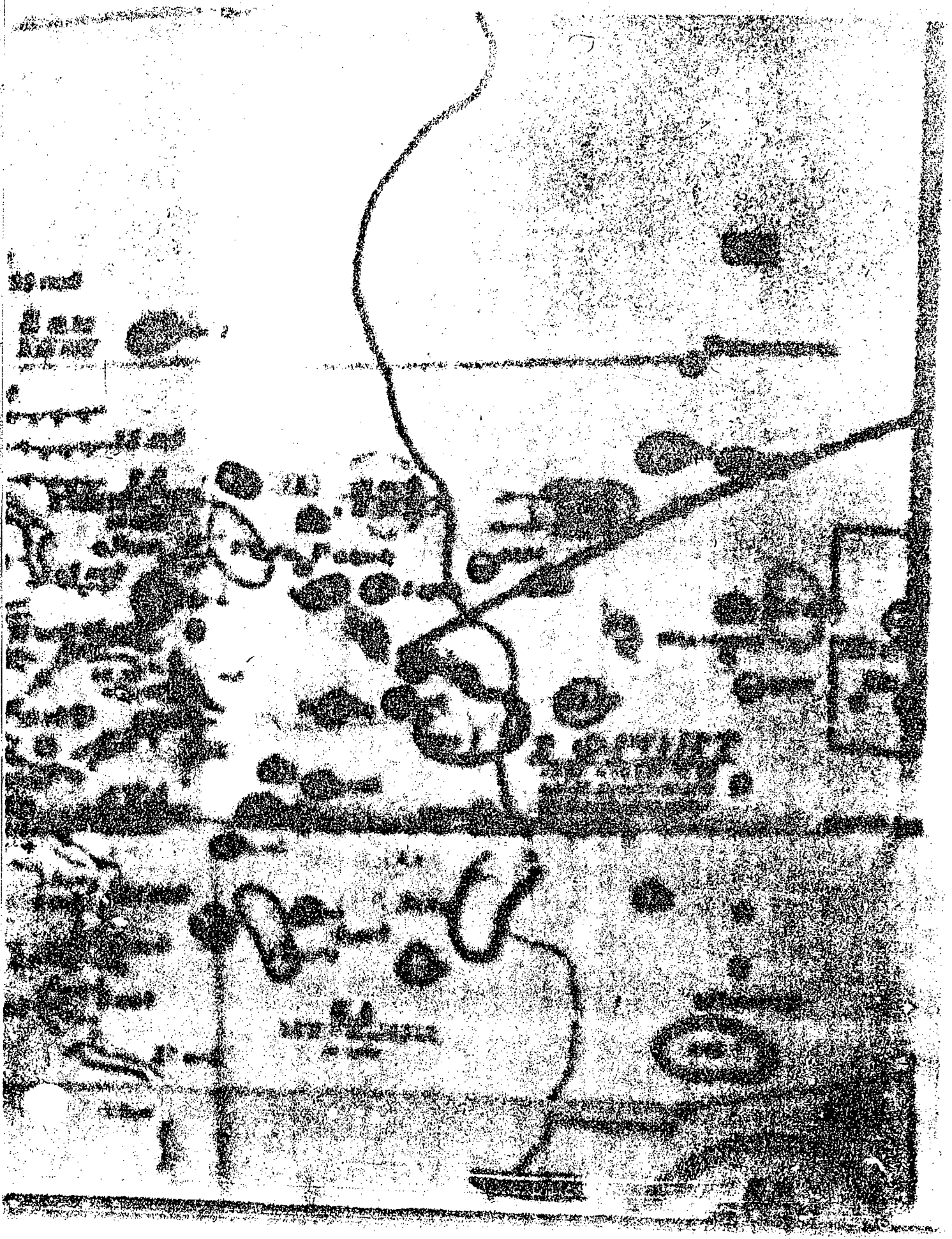
1000 ФРОНТА ЧЕРВЗ 3 ЧАСА
200-240 207



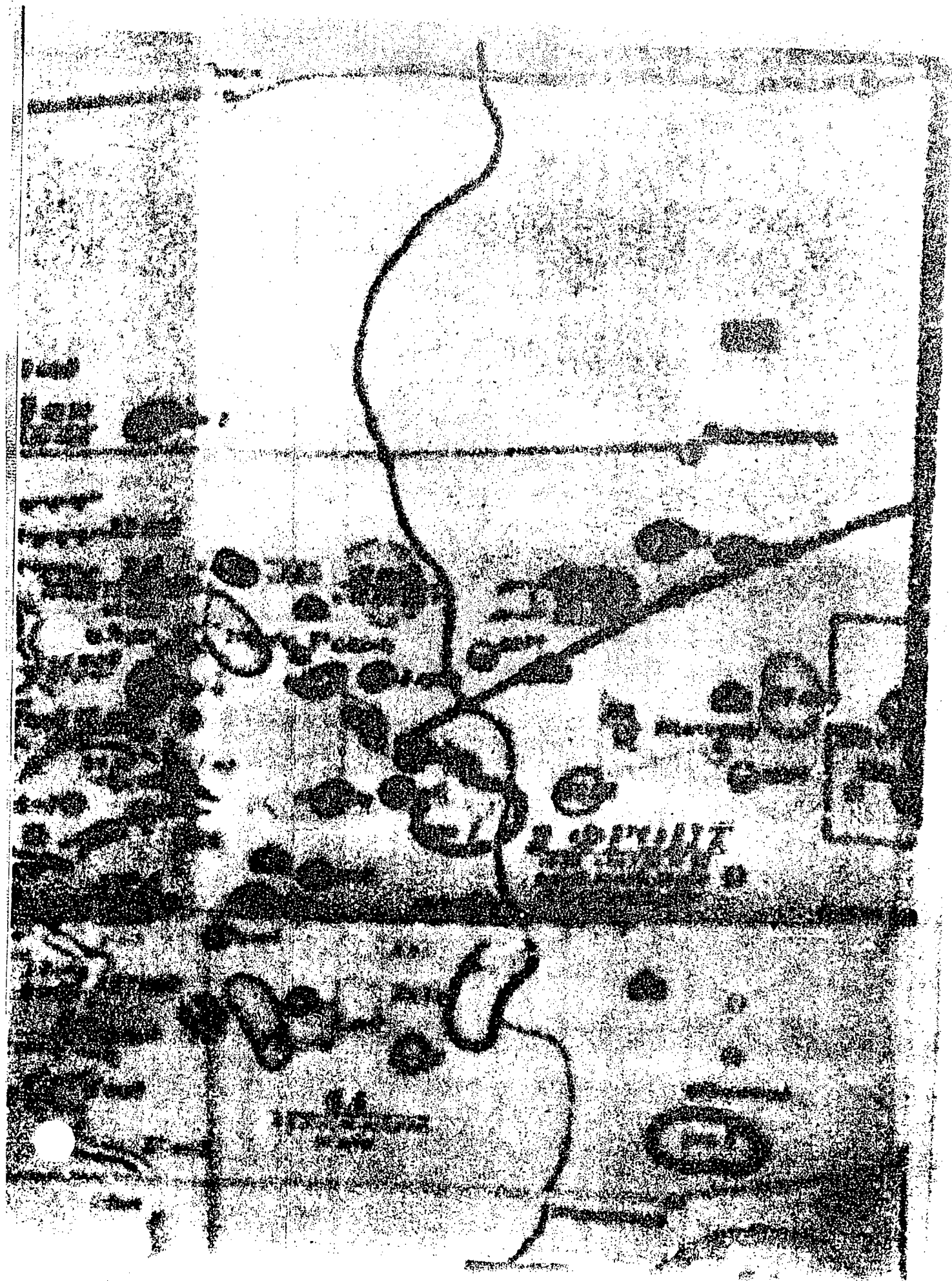








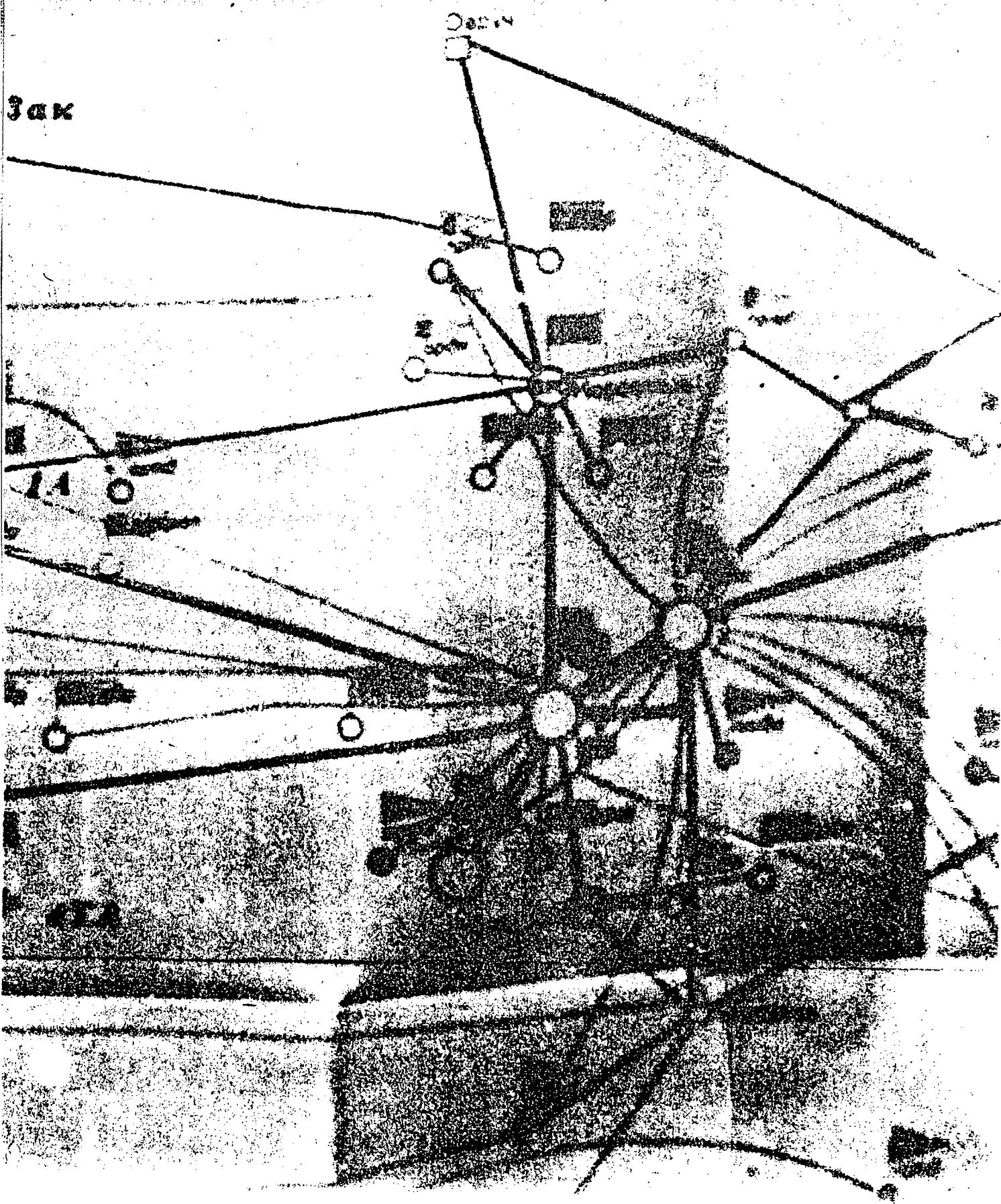


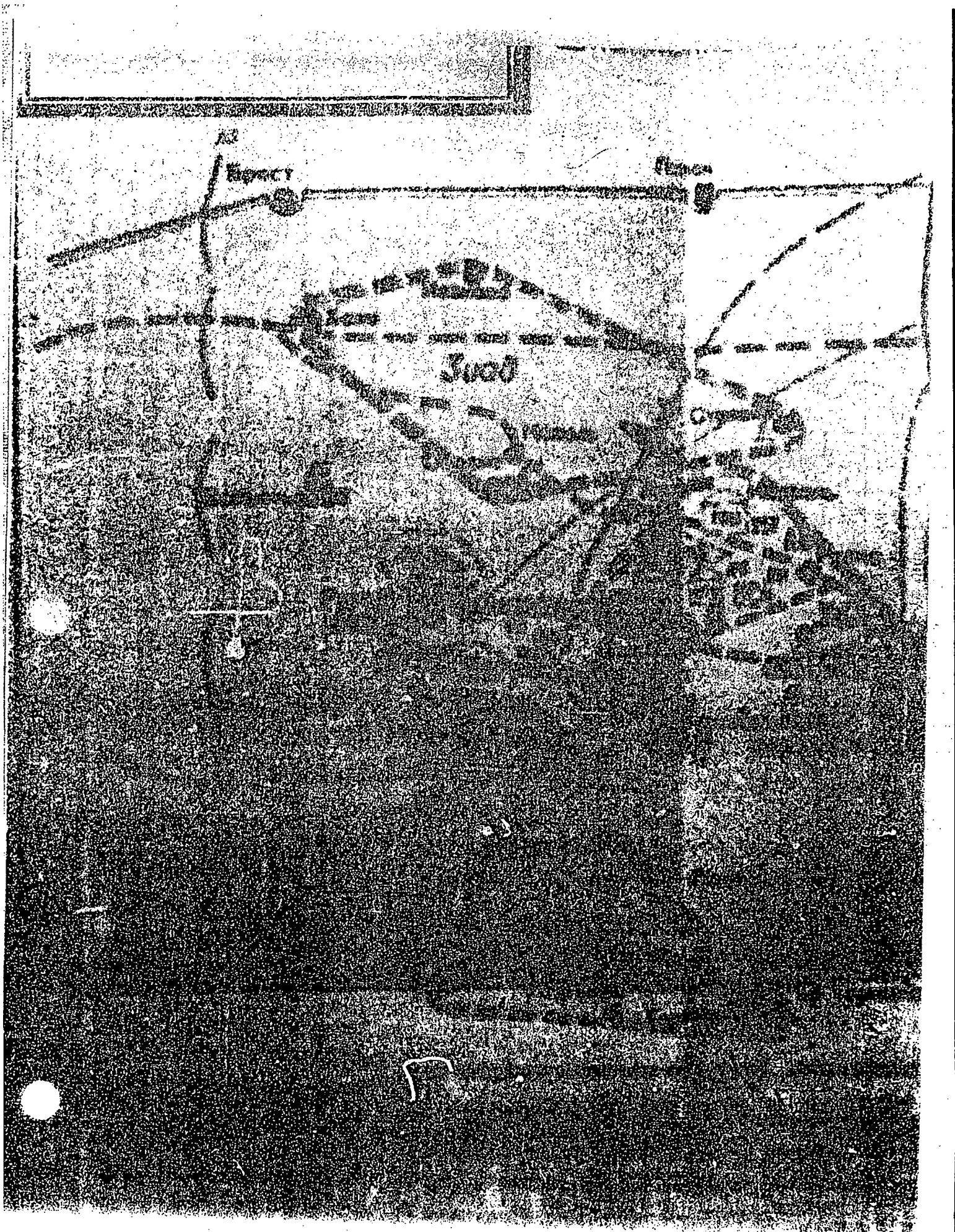


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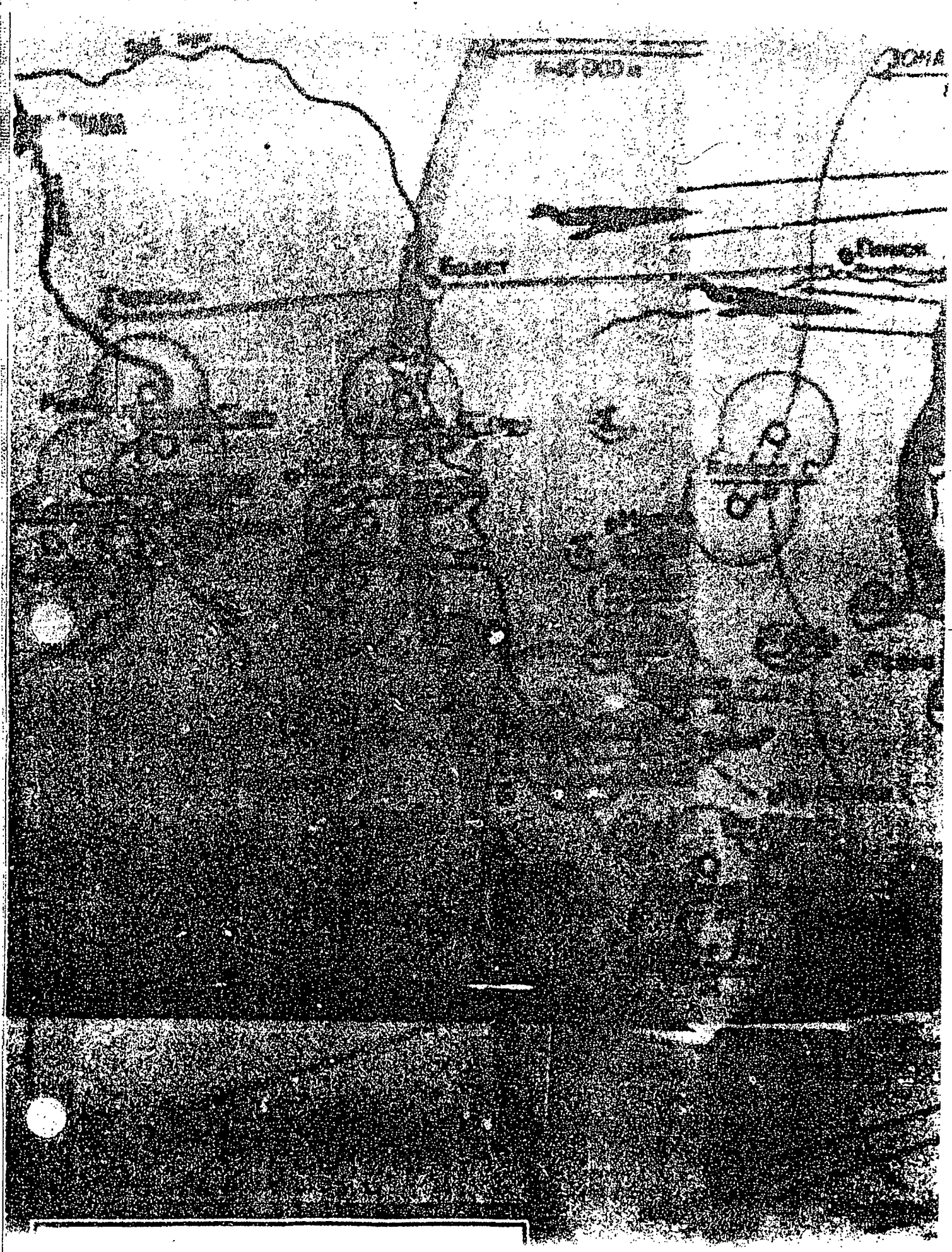


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Институт истории СССР



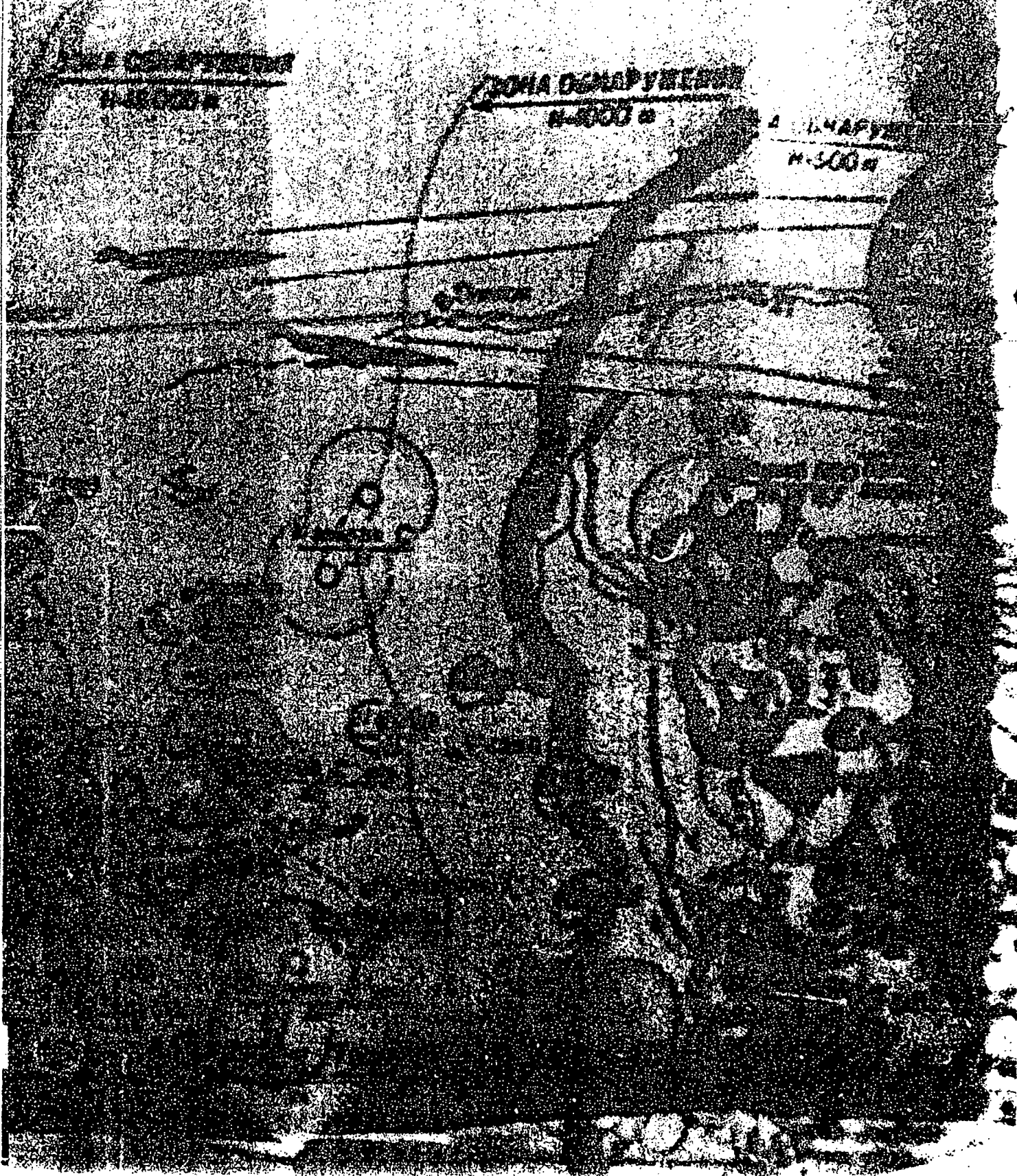


Я ПВО войск и объектов тыла операции

ЗОНА ОБНАРУЖЕНИЯ
H-4000 м

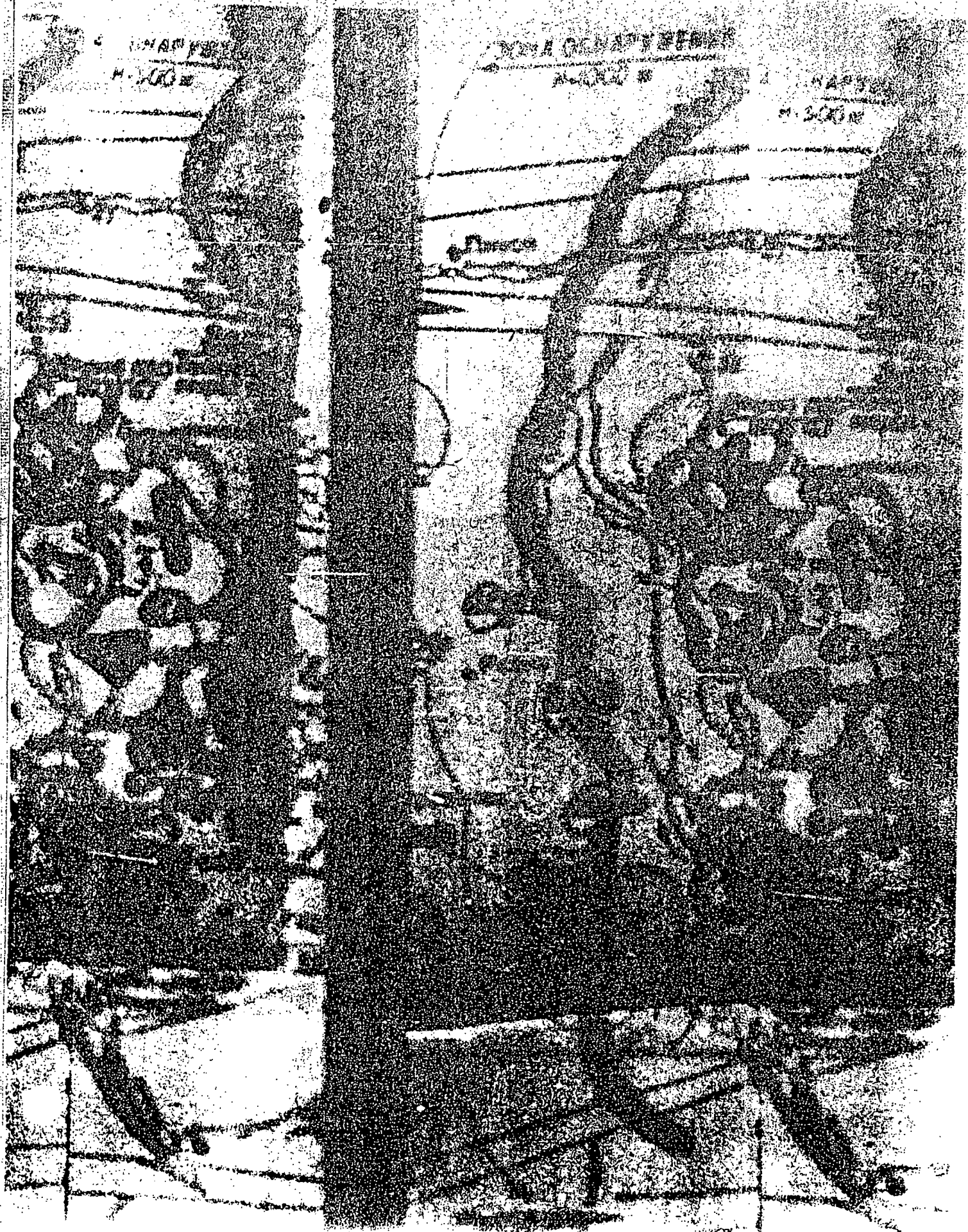
ЗОНА ОБНАРУЖЕНИЯ
H-3000 м

ЗОНА ОБНАРУЖЕНИЯ
H-3000 м

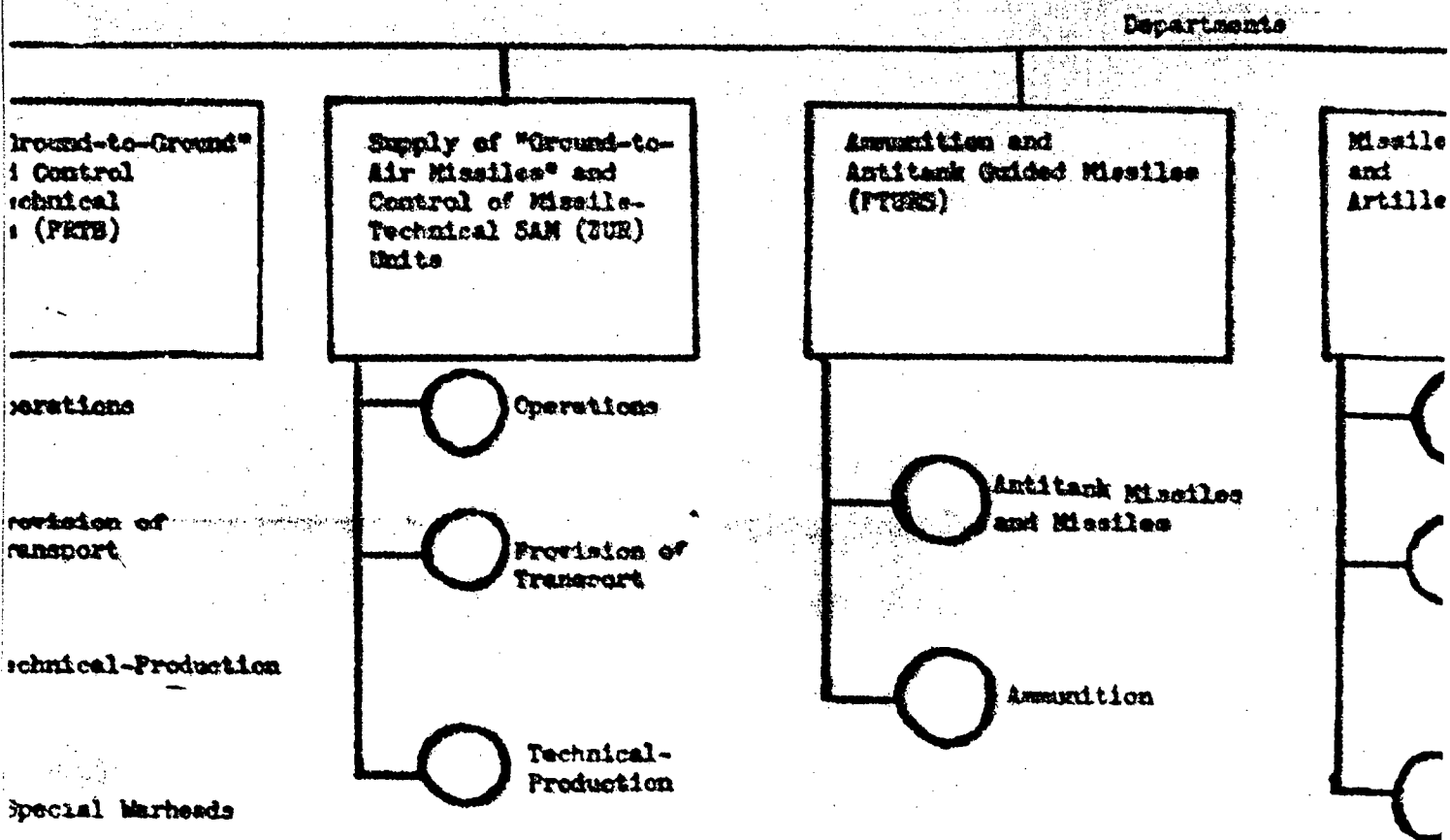
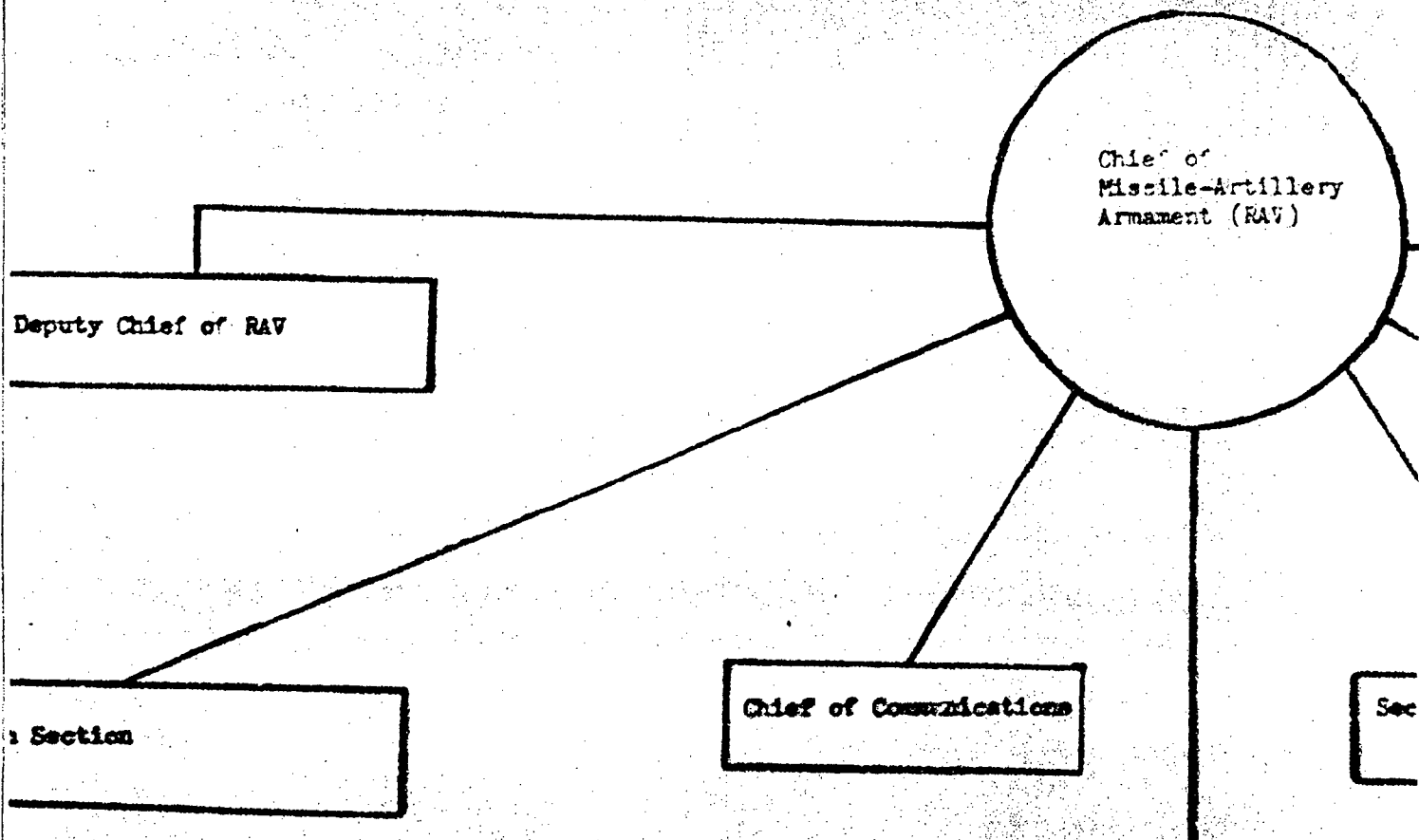


ОНТА В НАСТУПАТЕЛЬНОЙ









Chief Engineer of
Missile Armament (RV)

Chief Engineer of
Antiaircraft Missile
Armament (ZRV)

Finance - Planning Section

Aircraft
Missile Armament and
Technical-Repair
Services (RTS)

Repair and
Evacuation

Services
~~Reminder~~
~~Missing~~

Inspection

Ground
Equipment

RTS of
AA Artillery

RTS of
Field Artillery

Antiaircraft
Armament

Missile
Armament

Technical
Repair Service

Artillery
Armament

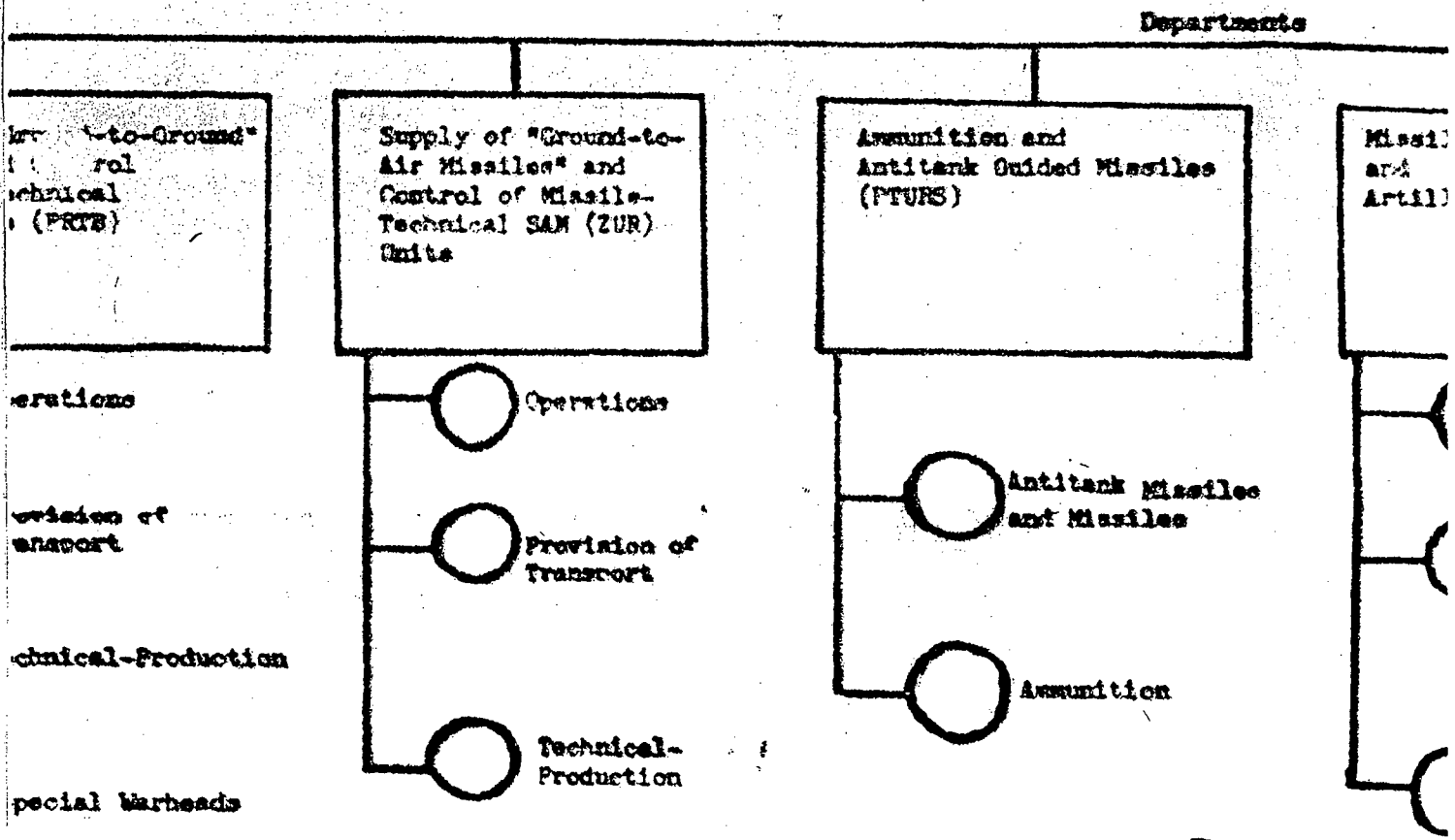
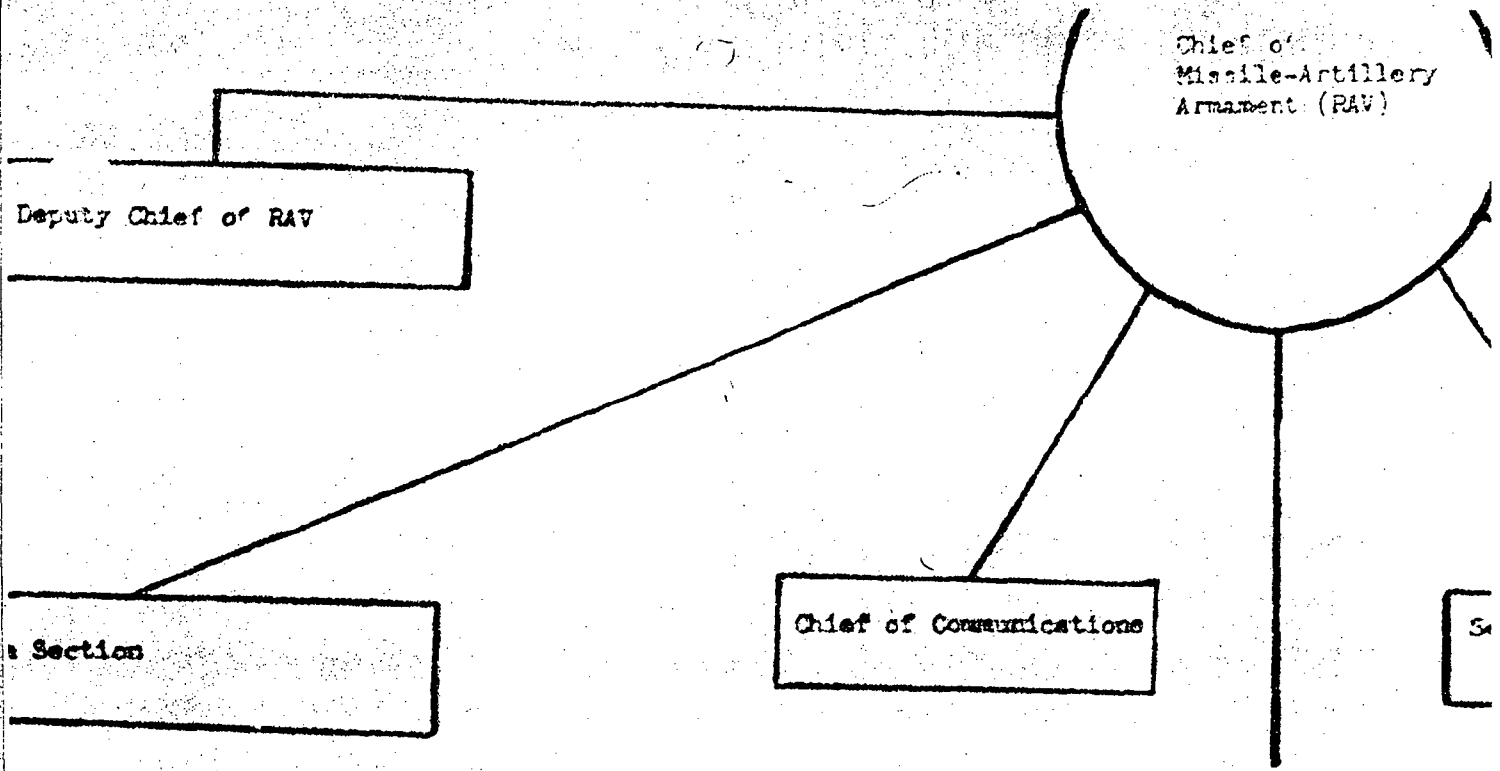
Evacuation

Guards and
Housekeeping

Base Services

Auto-tractor
Base (?)

Copy No. 



Chief Engineer of
Missile Armament (HV)

Chief Engineer of
Antisircraft Missile
Armament (ZHV)

Finance - Planning Section

Antisircraft
Missile Armament and
Technical Repair
Services (RTH)

Repair and
Evacuation

Services
~~Remainder~~
Missile

Inspection

Ground
Equipment

Ops of
AA Artillery

Ops of
Field Artillery

Antiaircraft
Armament

Missile
Armament

Technical
Repair Service

Artillery
Armament

Evacuation

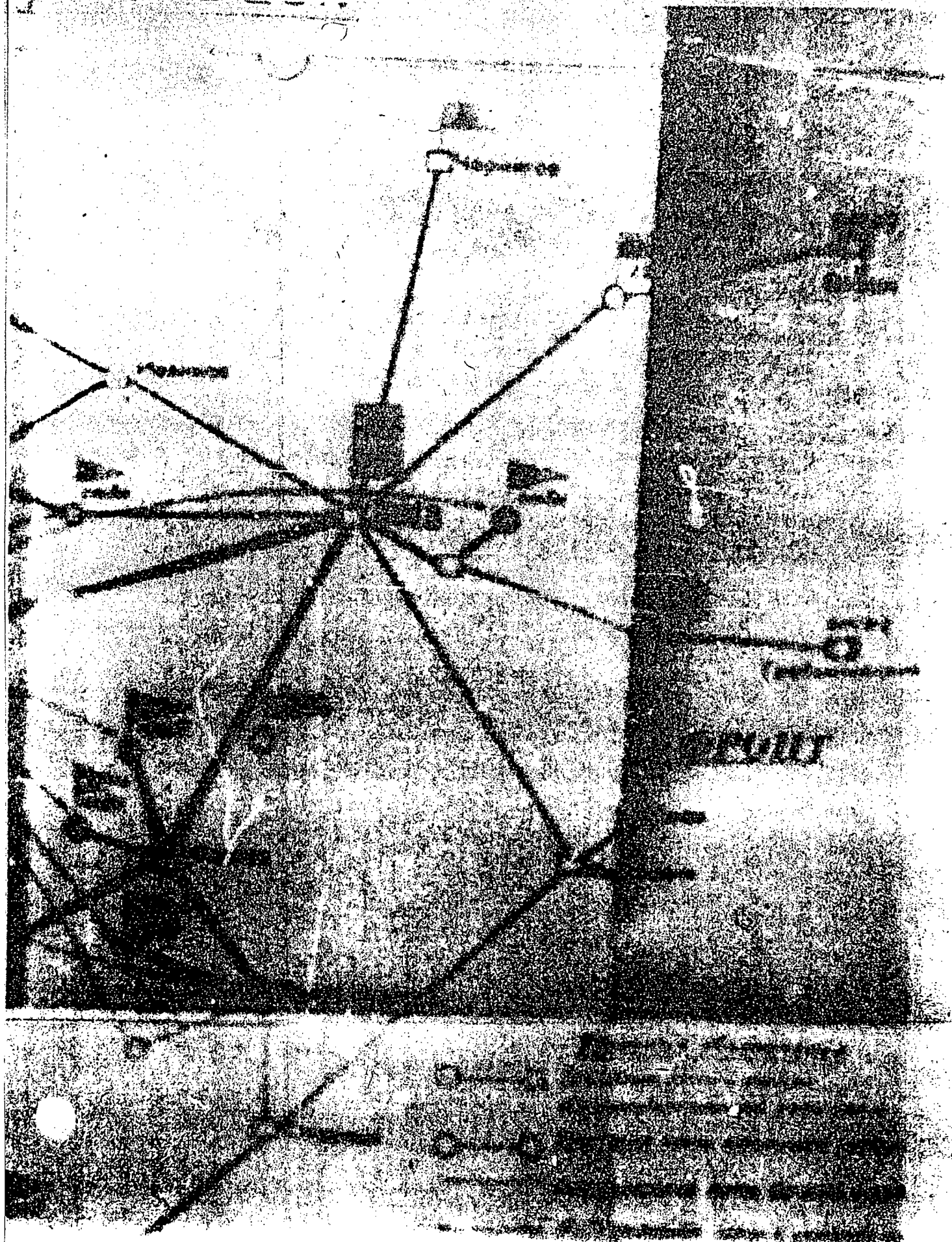
Quarrels and
Housekeeping

Base Services

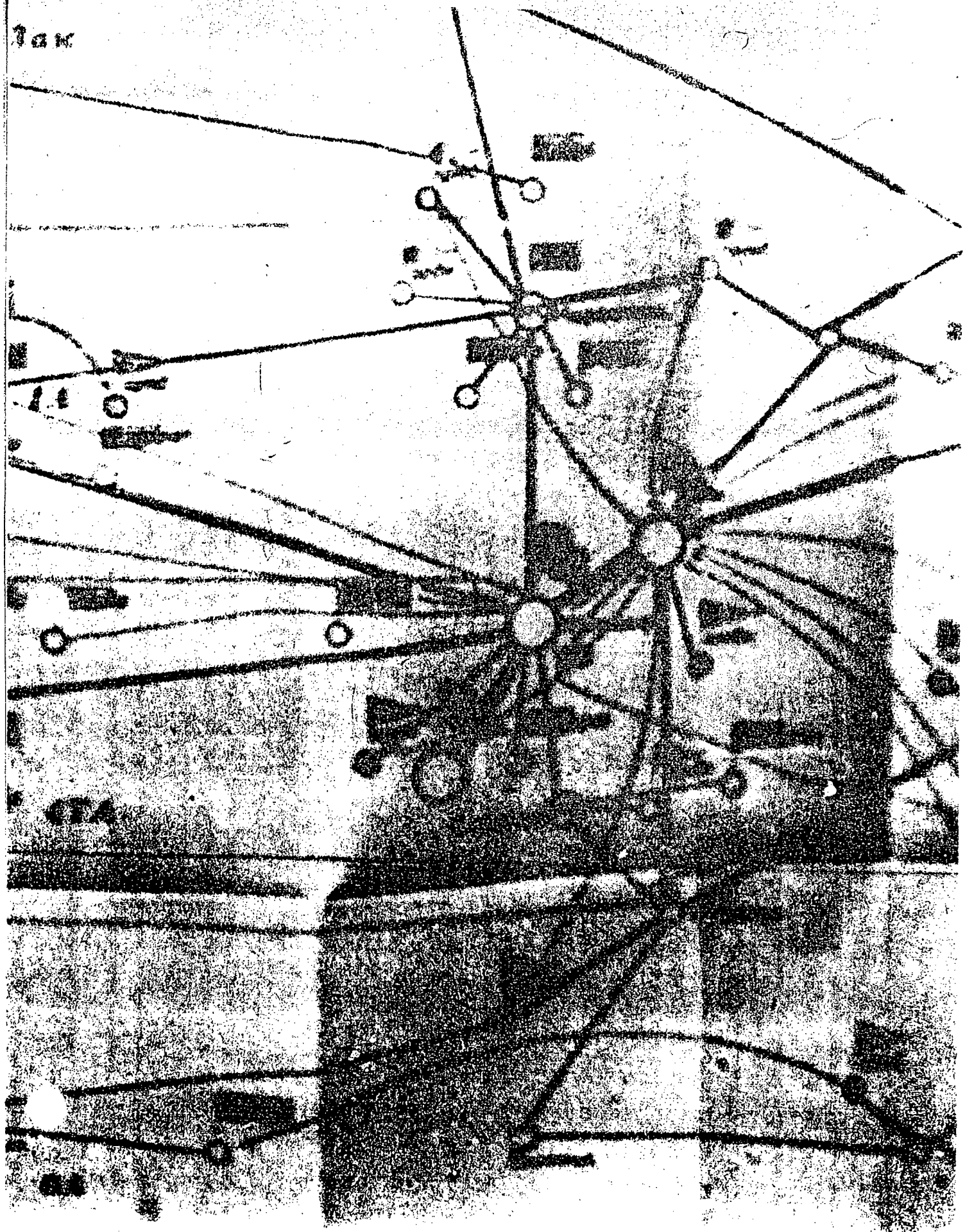
Auto-erector
Elev. (T)

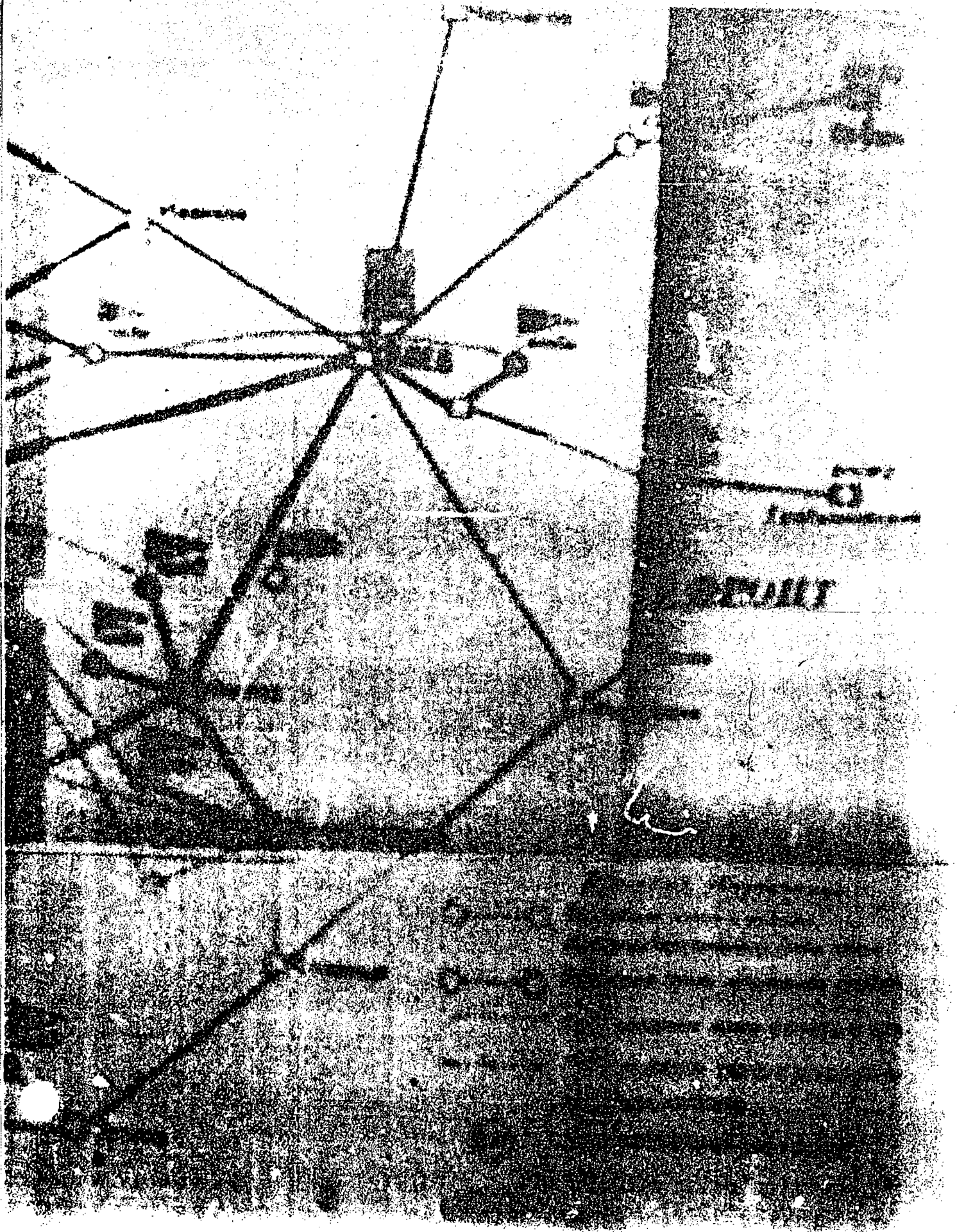
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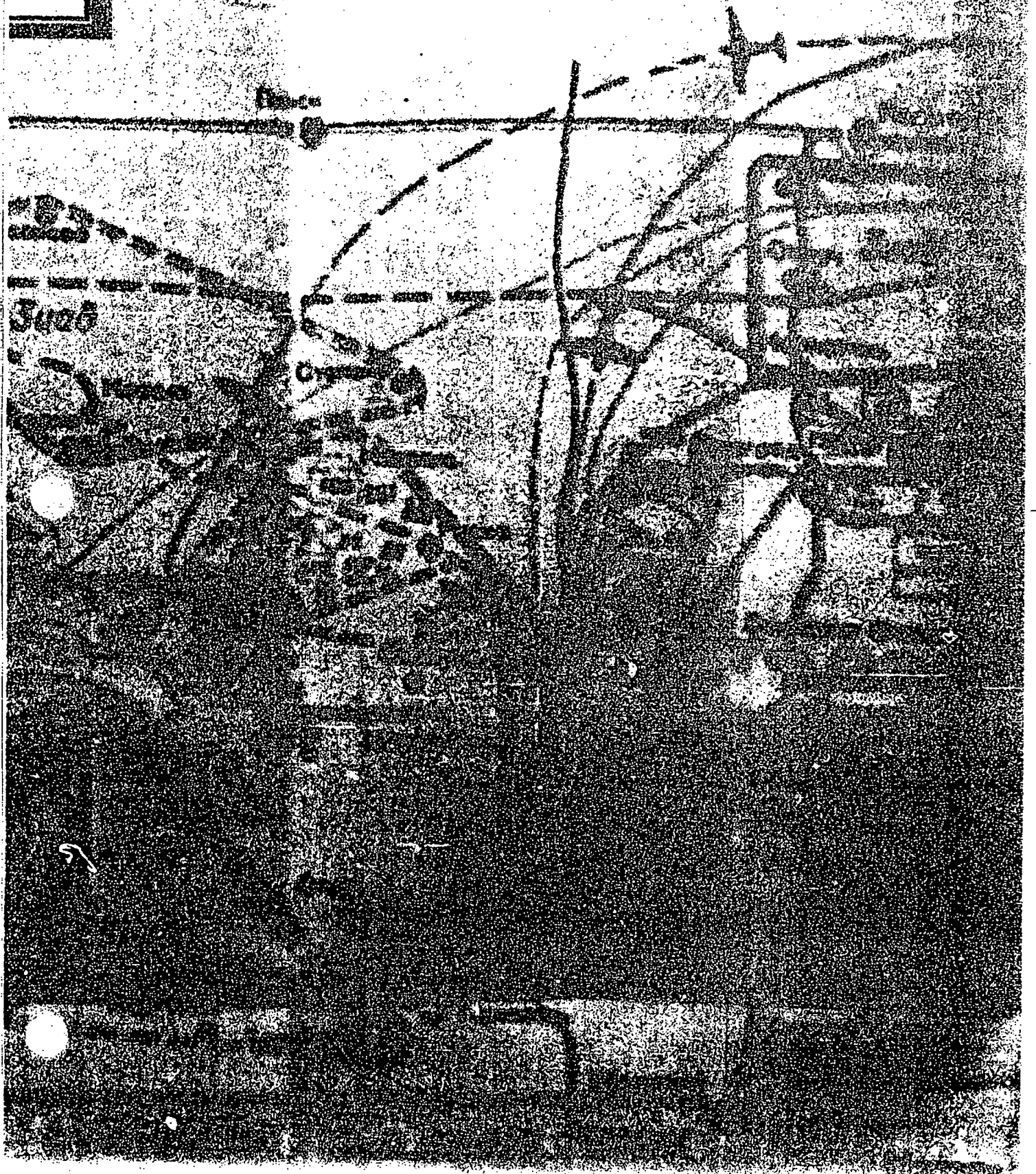


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Организация тыла и материальных авиационных и ракетных частей 78 В



то обеспе
ступательной

